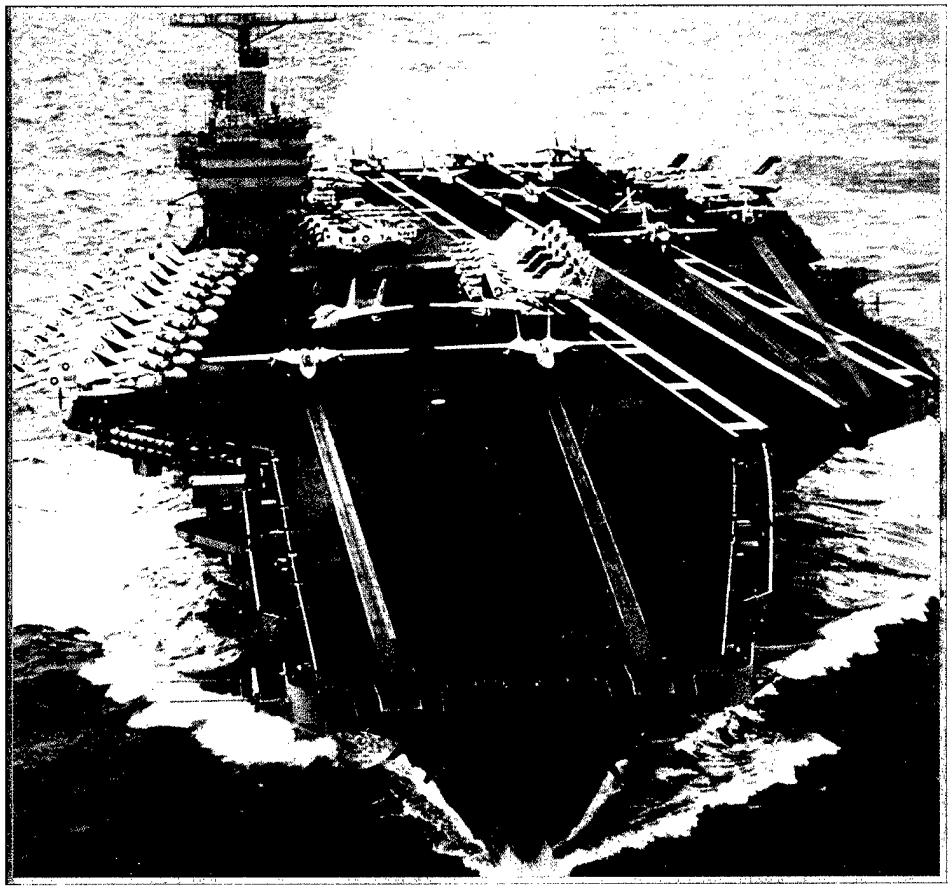
FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT

FACILITIES DEVELOPMENT NECESSARY TO SUPPORT POTENTIAL AIRCRAFT CARRIER HOMEPORTING NAVAL STATION MAYPORT, FLORIDA

DEPARTMENT OF THE NAVY



FINAL PROGRAMMATIC
ENVIRONMENTAL IMPACT STATEMENT

FACILITIES DEVELOPMENT NECESSARY TO SUPPORT POTENTIAL AIRCRAFT CARRIER HOMEPORTING

NAVAL STATION MAYPORT, FLORIDA

DEPARTMENT OF THE NAVY
SOUTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CHARLESTON, SOUTH CAROLINA

MARCH 1997

PREFACE

This document is the Final Programmatic Environmental Impact Statement (PEIS) to Evaluate Facilities Development Necessary to Support Potential Aircraft Carrier Homeporting at Naval Station Mayport, Florida. It has been prepared pursuant to the National Environmental Policy Act of 1969 (NEPA), and the U.S. Navy guidelines for implementing NEPA (OPNAVINST 5090.1B). The Draft PEIS was circulated for public review from March 22 to May 6, 1996, and comments were received both in writing and at the public hearing on April 24, 1996 at Fletcher Senior High School in Neptune Beach, Florida. A brief summary of the public notice activities undertaken to make the document available to interested parties is provided in this section, as is a description of the organization of this Final PEIS.

PUBLIC NOTICE ACTIVITIES

A Notice of Availability (NOA) for the Draft PEIS was published in the Federal Register on March 22, 1996. A Notice of Public Hearing was published in the Federal Register, and locally in the Jacksonville Times-Union and the Beaches Leader newspapers. The hearing notice listed the three public library locations in Jacksonville and Neptune Beach where the Draft PEIS could be reviewed.

The NOA specified a 45-day public review period (ending May 6, 1996) A Notice of Public Hearing was mailed to the approximately 100 agencies, offices, and individuals who received copies of the Draft PEIS. The notice was also mailed to approximately 90 other individuals, offices, and agencies.

The public hearing was held on April 24, 1996, at the Fletcher Senior High School auditorium. Approximately 17 people signed the attendance sheet, and two people provided oral comments for the record. Comment forms were available at the hearing, which allowed attendees to submit written comments at that time, or later, during the public comment period.

STRUCTURE OF THE FINAL PEIS

This Final PEIS consists of three parts:

- Preface

- The complete Draft PEIS text (March 1996) with revisions/clarifications based on the comments received.

- Comments and Responses with the written and oral public comments, including Navy responses to the comments.

PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT

FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT TO EVALUATE FACILITIES DEVELOPMENT NECESSARY TO SUPPORT POTENTIAL AIRCRAFT CARRIER HOMEPORTING AT NAVAL STATION MAYPORT, FLORIDA

Responsible Agency:

Department of the Navy

Title: Final Programmatic Environmental Impact Statement to Evaluate Facilities Development Necessary to Support Potential Aircraft Carrier Homeporting at Naval Station Mayport, Florida

Additional Information:

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Type of Report:

Final Programmatic Environmental Impact Statement

Abstract:

The Department of the Navy has prepared a Final Programmatic Environmental Impact Statement (PEIS) to analyze homeport facilities for a NIMITZ class aircraft carrier at Naval Station (NAVSTA) Mayport. The National Defense Authorization Act for Fiscal Year 1993 requires that Navy prepare a plan for developing NAVSTA Mayport as a NIMITZ class carrier homeport. Under existing carrier force structure plans, conventional aircraft carriers will be replaced by nuclear-powered carriers (CVNs). This document evaluates the environmental impacts of CVN homeporting at NAVSTA Mayport in the year 2010.

SUMMARY

1. TYPE OF REPORT

Final Programmatic Environmental Impact Statement (PEIS)

2. NAME OF ACTION

The proposed action is the establishment of a program for evaluation of facilities necessary for potential aircraft carrier homeporting at Naval Station (NAVSTA) Mayport, Florida.

3. PURPOSE AND NEED

The National Defense Authorization Act for Fiscal Year 1993 requires that the Navy prepare a plan for developing NAVSTA Mayport as a Nimitz class aircraft carrier (CVN) homeport (Public Law 102-484, Section 1011). Under existing carrier force structure plans, as conventional aircraft carriers are retired from service, they will be replaced by nuclear-powered aircraft carriers. NAVSTA Mayport does not have the facilities or dredged depth for a nuclear-powered aircraft carrier. The Navy submitted a report to Congress in 1993 which contained a plan for development of NAVSTA Mayport as a CVN homeport. The report identified several requirements, including preparation of this programmatic environmental impact statement.

4. PROPOSED ACTION

Council on Environmental Quality regulations, which implement the National Environmental Policy Act (NEPA) Of 1969, require that the policies and goals defined in NEPA be integrated into early planning, so that environmental issues can be identified and considered in early decision-making. The objective of this PEIS is the collection, analysis and portrayal of data in sufficient detail to allow programmatic level evaluation of potential impacts at NAVSTA Mayport. This PEIS evaluates the issues which have been identified as appropriate for study at this time. Additional NEPA documentation would tier upon this document if a decision is made to replace a conventional aircraft carrier with a CVN at NAVSTA Mayport. The analysis presented by this PEIS assumes that the CVN could homeport at NAVSTA Mayport in the year 2010.

5. ALTERNATIVES TO THE PROPOSED ACTION

Congress has directed the Navy to evaluate the feasibility of NAVSTA Mayport as a CVN homeport. This feasibility evaluation includes an environmental impact study, to identify and evaluate issues which will determine if NAVSTA Mayport is a feasible homeport. This PEIS is the first step in the environmental evaluation. By not developing the homeport scenario, all east coast CVNs would continue to be

homeported at NAVSTA Norfolk. This PEIS evaluates the facilities and dredging requirements for support of one Nimitz class aircraft carrier at NAVSTA Mayport, including an analysis of alternatives for carrier berthing, facilities siting, and dredged material disposal.

6. SUMMARY OF ENVIRONMENTAL IMPACT

The requirements for CVN homeporting at NAVSTA Mayport include dredging, construction of maintenance facilities, and construction of wharf and site improvements. Impacts from construction and operations of facilities were evaluated for three berthing alternatives. Impacts are generally the same for each alternative. Other impacts evaluated are those associated with the increased crew size and their dependents, construction personnel, and maintenance facility personnel. A summary of the environmental and socioeconomic impacts that would be caused by the potential action follows.

PHYSICAL RESOURCES

The St. Johns River entrance channel and NAVSTA Mayport turning basin and entrance channel would require dredging to accommodate the depth requirements of the CVN. Approximately 5.7 million cubic yards of material would be removed. The basin depth would be 50 feet below mllw, plus two foot overdredge. Dredging and dredged material disposal operations would temporarily cause turbidity in the water. The material that would be dredged has been approved by EPA for offshore disposal; this approval is valid through March 1997.

Construction activities would disturb up to 20 acres of soils, some of which have been previously disturbed. Potential short-term erosion would be minimized by implementing erosion control measures. Accidental spills of hazardous materials during construction and operation of facilities would be contained, and remediated, following existing Navy contingency plans. These measures and plans would also protect water resources in the area.

Short-term impacts to air quality are expected from operation of construction equipment, including dredges, and use of building materials. No deterioration of air quality is anticipated from construction. Operation of the maintenance facilities would produce welding fumes, cleaning solution fumes, and other emissions. All sources would comply with the air regulations in the Florida Administrative Codes. Emissions from dredging may be above *de minimis* levels for NOx in the 1993 General Conformity Rule, and a conformity determination would be prepared if Duval County is still classified as a maintenance area when the project is proposed. If the potential project addressed in this PEIS is proposed, the action would be reviewed by the FDEP to determine consistency with the Clean Air Act. Maintenance facilities would produce emissions from paint booths and solvents. Emissions controls will be used as required by FDEP permits.

Construction and operation of facilities would generate noise in the waterfront area. Noise levels would be similar to existing levels in this industrial area.

Wastewater from the carrier and maintenance facilities would be discharged to existing shore facilities. The NAVSTA Mayport wastewater treatment plant has capacity for the anticipated slight increase in volume and would treat the water to permit standards before discharge. Industrial/bilgewater (including oily wastewater) production is less for a CVN than a CV and would be pretreated at the oily wastewater treatment plant.

BIOLOGICAL RESOURCES

Four acres of existing landscaped vegetation would be removed during construction. Open areas of the sites would be revegetated following construction. Dredging would affect aquatic species, causing some to relocate temporarily. The feeding areas of some birds would be temporarily disturbed. Plankton and benthos in the turning basin would be temporarily affected by wharf construction and dredging. Dredged material disposal at the ODMDS would also temporarily affect biological communities. Communities would recover after the activities. Threatened and endangered species would not be affected by construction, dredging, or facilities operations.

SOCIOECONOMIC RESOURCES

A CVN crew is 3,217 persons; 102 more than a conventional aircraft carrier. The potential increase in personnel and dependents from replacing an existing carrier with a CVN would be 217 persons. Most of the additional crew would live aboard the carrier. On-base family housing resources are anticipated to remain at full occupancy, and the additional personnel with families would probably seek housing in residential areas near NAVSTA Mayport.

The maintenance facilities would employ up to 1000 workers during a six month maintenance availability. These employees would live in rental (apartments, hotels, motels, and other) housing. This would have a positive economic effect on the temporary housing market.

The estimated construction cost, including dredging and purchase and installation of collateral equipment, for the facilities and improvements required for homeporting a CVN is $141.2 million. Construction-related employment would total approximately 850 jobs during the construction period. The overall project, from design through facility approval, would extend over a 7-year time period, with a peak construction employment of 340 employees.

Berthing Alternative 3 is consistent with the land use plan in the NAVSTA Mayport Master Plan. Alternatives 1 and 2 have constraints related to operations at the station.

Most of the utilities requirements of the carrier can be supplied by the existing naval station infrastructure. Additional electricity substations would be required, and some

modification to wharf connections. NAVSTA Mayport can supply the anticipated maximum water supply requirement of 32,000 GPD, and wastewater treatment facilities have approximately 0.7 MGD available capacity.

Approximately 150,000 pounds per year of hazardous waste would be generated from carrier activities in port, approximately the same amount as for a CV. The waste storage facility on base has adequate capacity to store the waste. Potential construction of maintenance facilities could impact SWMU 23, a contaminated site located southwest of Wharf F which requires further investigation and possible remediation prior to construction.

A minor increase in vehicle trips would result from homeporting the CVN, and these would be distributed throughout the area. Proposed roadway improvement to Mayport Road and Atlantic Boulevard would improve levels of service of area roadways. The proposed Wonderwood Expressway would also improve access in the area of the naval station.

The population increase associated with CVN homeporting would place minor additional demands on housing and community services, such as police, fire, recreation, and education. These effects would be a small part of the total impact from the projected population increase in the Jacksonville area.

7. MEANS TO MITIGATE ENVIRONMENTAL IMPACTS

Pursuant to requirements outlined in the Council on Environmental Quality (CEQ) regulations, this PEIS contains suggested measures to minimize or reduce unavoidable adverse impacts that would result from the potential action. Mitigation requirements would also be addressed in future environmental documentation for potential projects.

Potential erosion of soils during construction would be minimized by implementing proper site drainage plans and erosion protection techniques, consistent with the requirements of Florida and NPDES programs. All open portions of the sites disrupted by construction activities would be landscaped and revegetated following construction.

Potential impacts to air quality from activities at the maintenance facilities would be mitigated by use of recovery systems or other emissions controls, in compliance with Florida Administrative Codes. Navy will coordinate with FDEP and EPA regarding potential air quality impacts from dredging and dredged material disposal.

If previously unidentified cultural resources are encountered during construction activities, that portion of the activity would be halted and the site would be investigated.

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FIGURES

GLOSSARY

AADT	- Annual average daily traffic
ADA	- Average Daily Attendance
AFFF	- Aqueous Film-Forming Foam
AIWW	- Atlantic Intracoastal Waterway
AOC	- Area of Concern
APZ	- Accident Potential Zone
CEQ	- Council of Environmental Quality
cfm	- cubic feet
CIF	- Controlled Industrial Facility
CZM	- Coastal Zone Management
DCA	- Department of Community Affairs
DPEIS	- Draft Programmatic Environmental Impact Statement
DMF	- Depot-level Maintenance Facility
DNR	- Department of Natural Resources
DOD	- Department of Defense
DOE	- Department of Education
DRI	- Developments of Regional Impact
EA	- Environmental Assessment
EIS	- Environmental Impact Statement
EPA	- Environmental Protection Agency
ESI	- Expanded Site Investigation
ESQD	- explosive safety quantity distance
FDEP	- Florida Department of Environmental Protection
FDOT	- Florida Department of Transportation
FEIS	- Final Environmental Impact Statement
FISC	- Fleet Industrial Supply Center
FLETRACEC	- Fleet Training Center
GPD	- gallons per day
GPM	- gallons per minute
HEPA	- high efficient particulate air
IAS	- Initial Assessment Study
IR	- Installation Restoration
JAXPORT	- Jacksonville Port Authority
JDHUD	- Jacksonville Department of Housing and Urban Development
JEA	- Jacksonville Electric Authority
JIA	- Jacksonville International Airport
JTA	- Jacksonville Transportation Authority
KV	- kilovolts
KVA	- Kilovolt-amps
LF	- linear feet
LOS	- level of service
LSJRB	- Lower St. Johns River Basin
MAHC	- Military Authorized Housing Cost
MCY	- million cubic yards

GLOSSARY

MG	- million gallons
MGD	- Million Gallons per day
MILHDBK	- Military Handbook
mllw	- mean lower low water
mlw	- mean low water
MSA	- Metropolitan Statistical Area
MSF	- Maintenance Support Facility
msl	- Mean Sea Level
MTMC	- Military Traffic Management Command
NACIP	- Navy Assessment and Control of Installation Pollutants
NAS	- Naval Air Station
NAVSTA	- Naval Station
NEESA	- Navy Energy and Environmental Support Center
NEPA	- National Environmental Policy Act
NESHAP	- national emission standards for hazardous air pollutants
NFRPC	- North Florida Regional Planning Council
NMFS	- National Marine Fisheries Service
NOAA	- National Oceanic and Atmospheric Administration
NPDES	- National Pollutant Discharge Elimination System
NSB	- Naval Submarine Base
NSPS	- New Source Performance Standards
NSR	- New Source Review
ODMDS	- off-shore dredged material disposal site
OFW	- Outstanding Florida Waters
OLA	- Outlying Airfield
OPNAVINST	- Office of Chief of Naval Operations Instruction
OWTP	- Oily Waste Treatment Plant
PD & E	- Project Development & Environmental
PEIS	- Programmatic Environmental Impact Statement
POV	- privately owned vehicles
ppt	- parts per thousands
psf	- pounds per square foot
psi	- pounds per square inch
psig	- pounds per square inch gauge
RCRA	- Resource Conservation and Recovery Act
RFA	- RCRA Facility Assessment
RFI	- RCRA Facility Investigation
RPC	- Regional Planning Council
SARA	- Superfund Amendments and Reauthorization Act
scf	- standard cubic feet
scfm	- standard cubic feet per minute
SIC	- Standard Industrial Code
SIMA	- Shore Intermediate Maintenance Activity
SJWMD	- St. Johns River Water Management District

GLOSSARY

SMF	- Ship Maintenance Facility
SOUTHDIV	- Southern Division
SUPSHIP	- Supervisor of shipbuilding, conversion, and repair
SWMU	- Solid Waste Municipal Unit
SWPPP	- Stormwater Pollution Prevention Plan
TG&B	- Turner Collie & Braden
USFWS	- U.S. Fish and Wildlife Service
USAE	- U.S. Army Corp of Engineers
USAED	- U.S. Army Corp of Engineers District
USGS	- U.S. Geological Survey
USS	- United States Ship
VOC	- volatile organic compounds
SVOC	- semi-volatile organic compounds

1.0 PURPOSE OF AND NEED FOR ACTION

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1.1 OVERVIEW

This Final Programmatic Environmental Impact Statement (PEIS) analyzes the potential impacts of homeporting a Nimitz class aircraft carrier at Naval Station (NAVSTA) Mayport, Florida (Figure 1-1). The Nimitz class aircraft carrier is a nuclear-powered carrier (CVN). This PEIS complies with the Congressional directive in the National Defense Authorization Act for Fiscal Year 1993 (Public Law 102-484) to evaluate NAVSTA Mayport as the second United States East Coast homeport for nuclear-powered aircraft carriers (Figure 1-2). The construction and operation of facilities necessary to support homeporting a CVN at NAVSTA Mayport are the subject of this PEIS. The analyses presented in the PEIS are based on the requirements for a CVN to be homeported in the year 2010. The CVN would replace a conventionally-powered carrier (CV).

This PEIS has been prepared in compliance with the National Environmental Policy Act of 1969 (NEPA) as implemented by Council on Environmental Quality regulations (40 CFR Part 1500-1508) and the guidelines contained in the Chief of Naval Operations Environmental and Natural Resources Program Manual (OPNAVINST 5090.1B). In accordance with NEPA and CEQ regulations, the policies and goals defined in NEPA have been integrated into early project planning, so that environmental issues can be identified and considered in early decision making. CEQ regulations encourage use of "tiering" whenever appropriate to eliminate repetitive discussions of the issues and to focus on the actual issues suitable for discussion at each level of the environmental review. Tiering is accomplished through preparation of a broad programmatic environmental impact statement which discusses the impacts of a wide-ranging or long-term, stepped program followed by more narrowly defined environmental studies concentrating on specific issues. Homeporting a CVN at NAVSTA Mayport would require an in-depth study to determine and quantify detailed requirements. This PEIS evaluates the issues to the maximum level of detail possible at this time. To homeport a CVN at NAVSTA Mayport by 2010, additional studies would have to be completed by 2004, to allow time for project design, permitting and construction.

1.2 PURPOSE AND NEED

The purpose of the proposed action is to fulfill the legislative directive by evaluating the requirements for homeporting a nuclear-powered aircraft carrier at NAVSTA Mayport. The National Defense Authorization Act for Fiscal Year 1993, passed by Congress on October 23, 1992, states in Section 1011:

> "(a) FINDINGS - Congress finds that-
> (1) Mayport, Florida, has served well as a homeport for aircraft carriers:

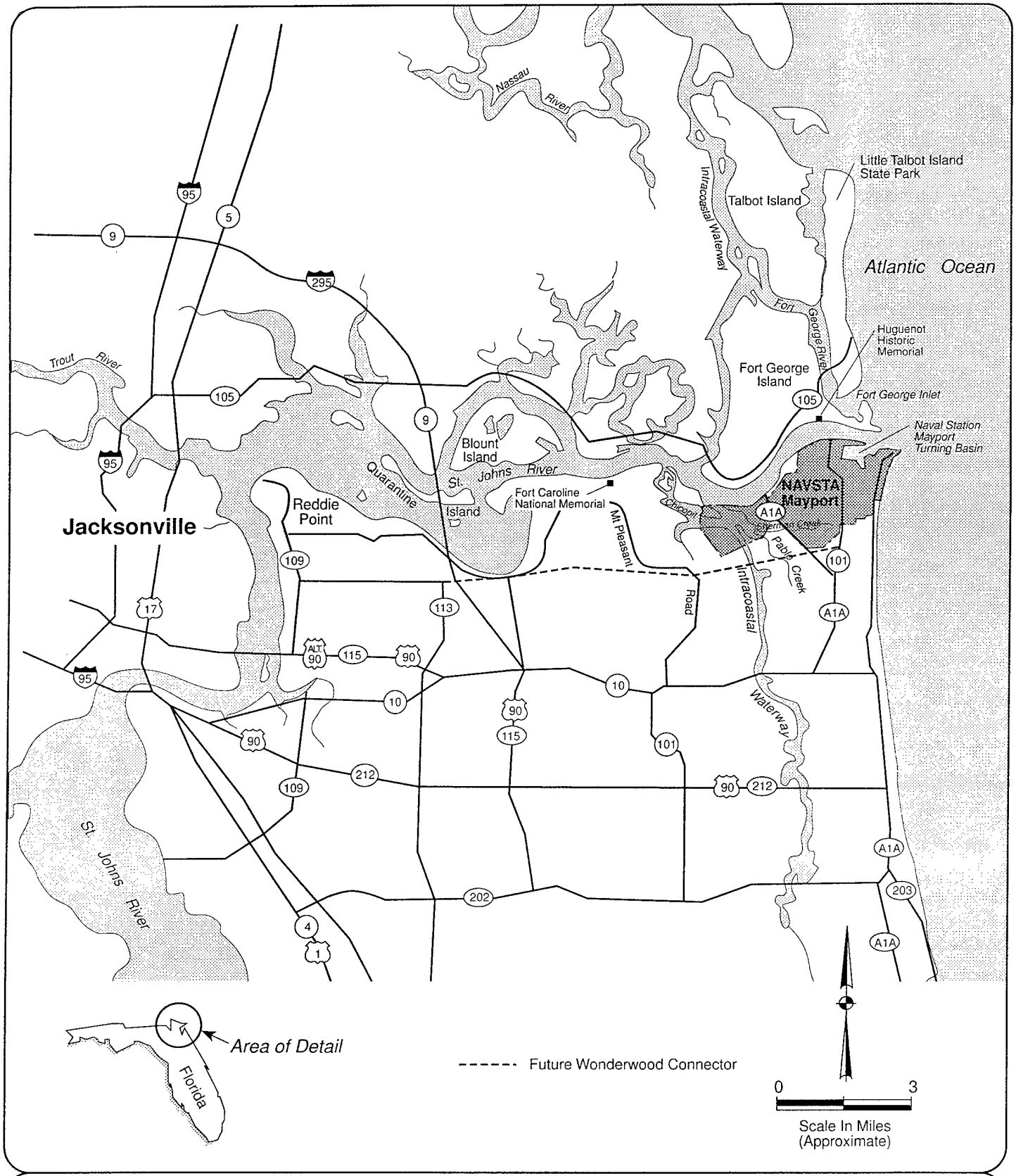


Figure 1-1. Jacksonville / Mayport Area Map

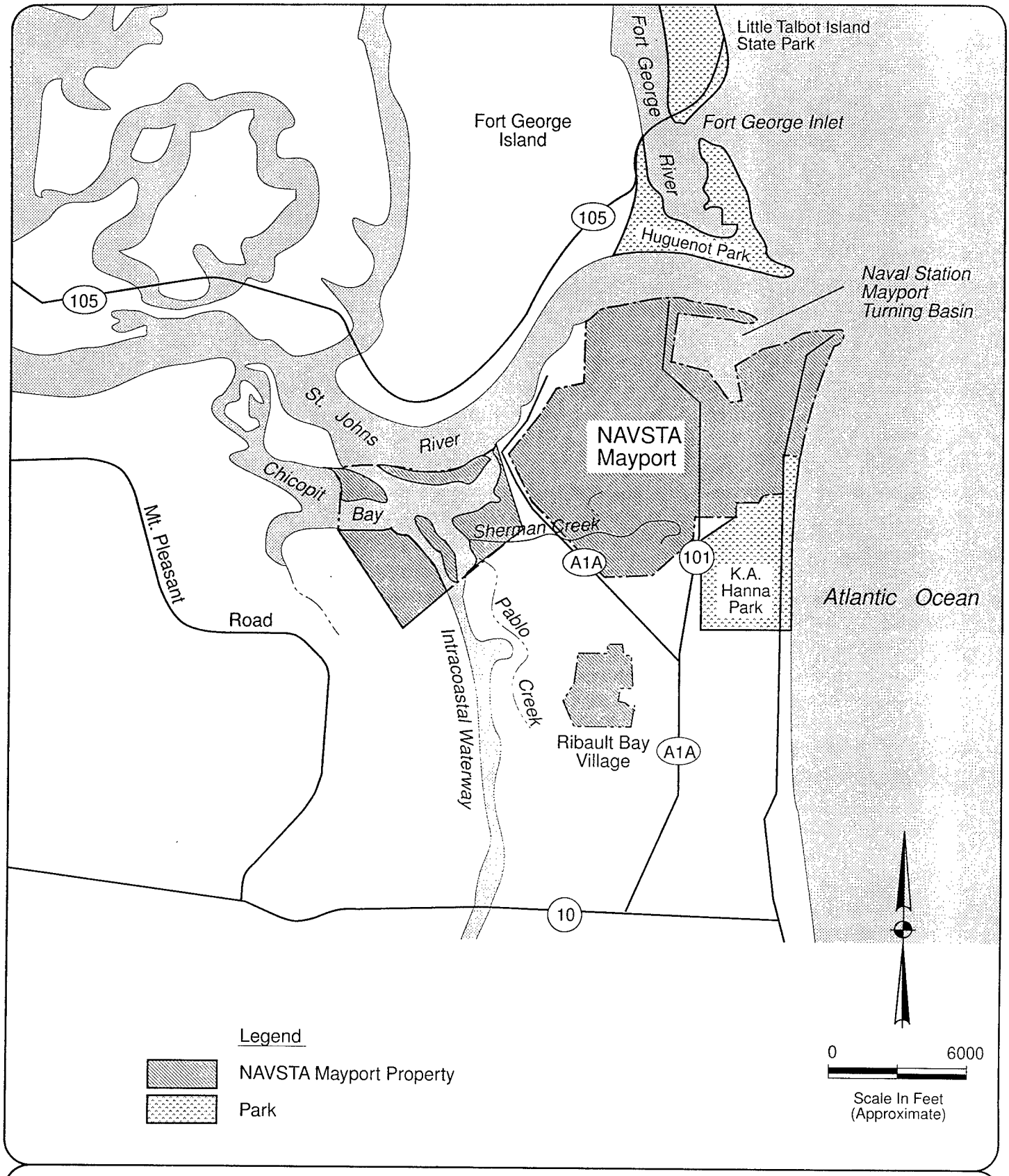


Figure 1-2. NAVSTA Mayport Vicinity

(2) under existing carrier force structure plans, as conventionally fueled aircraft carriers are replaced by nuclear-powered aircraft carriers, there will be a requirement for a second East Coast homeport for nuclear-powered aircraft carriers (in addition to the existing homeport of Norfolk, Virginia); and

(3) Mayport ought to be the second East Coast homeport for nuclear-powered aircraft carriers, when such additional homeport becomes needed.

(b) DEVELOPMENT OF SECOND HOMEPORT. - Not later than April 1, 1993, the Secretary of the Navy shall submit to the congressional defense committees a report on the Navy's plan for developing a second East Cost homeport for nuclear-powered aircraft carriers. The report shall include a schedule, by fiscal year, for funding the development of a second homeport for nuclear-powered aircraft carriers on the East Coast of the United States. The schedule shall be consistent with the Navy's plan to retire conventionally fueled aircraft carriers and to deploy nuclear-powered aircraft carriers."

In response to this directive, the Secretary of the Navy submitted a report April 1, 1993 to the House of Representatives, Subcommittee on Defense. The report provided a plan for developing NAVSTA Mayport as the second East Coast homeport for nuclear-powered aircraft carriers. Milestones of the plan include preparation of a facility study and environmental impact statement. The facility study was completed January 1995, and this PEIS evaluates the environmental impacts of upgrading and operating NAVSTA Mayport as a homeport for a CVN. If a CVN is proposed to be homeported at NAVSTA Mayport in the future, additional analyses will tier upon this document.

The purposes of the PEIS for CVN homeporting at NAVSTA Mayport are:

- to identify possible alternative sites for required support facilities;
- to determine the environmental impact of dredging, as well as construction and operation of required support facilities;
- to identify applicable regulatory requirements and methods of compliance pertaining to dredging, as well as construction and operation of support facilities; and
- to involve the public and agencies in the evaluation process.

1.3 OTHER RELEVANT DOCUMENTS

There are no previous environmental studies which are integrated with or influence the scope of this PEIS. Three studies prepared concurrently with the PEIS and used as references are:

- Final Site Development Study for CVN Homeporting at Naval Station Mayport (SOUTHDIV, 1995) (i.e. later referred to as Facilities Study);
- Mayport Carrier Homeporting Disposal Area Study (USAE, 1994); and
- Study for CVN at Naval Station Mayport, Waterfront Structures and Utilities (Gee and Jenson, 1994).

The following FEIS has been incorporated by reference into this PEIS:

- Disposal of Decommissioned Defueled Naval Submarine Reactor Plants, 1984.

1.4 DECISION NEEDED

This PEIS will identify the potential environmental impacts of homeporting a CVN at NAVSTA Mayport. The PEIS process will assist the Navy in determining whether Mayport is a potentially feasible homeport for a CVN and whether military construction program documents should be prepared. The Navy could select the proposed action - establishment of a program to homeport a CVN at NAVSTA Mayport, or they could choose no action. By not developing the homeport scenarios, all east coast CVN's would continue to be homeported at NAVSTA Norfolk. If the decision is made to implement the program, the Navy must determine the best alternatives for meeting the facility/operational requirements of the potential homeport. The intent of this PEIS is to provide the environmental information necessary to make the decisions and to document those decisions.

1.5 SCOPING

During the preparation of this PEIS, an effort has been made to locate, inform and seek input from interested individuals, groups, and agencies. These efforts have included coordination letters, public notices, press releases, public scoping meeting, and public hearing. Federal, state, and local agencies and public interest groups were initially notified of the proposed PEIS by publication of a Notice of Intent (NOI). The NOI was published in the Federal Register (Vol. 58, No. 193, p. 52291) and local newspapers during October, 1993. The notice was also mailed to individual agencies and the State Clearinghouse. Meetings and telephone conversations also aided coordination efforts.

1.5.1 Meetings

A public scoping meeting was held on October 26, 1993 at 7:00 p.m. at Fletcher Senior High School auditorium, Neptune Beach, Florida. There were 48 individuals registered at the meeting; two represented local public officials. Representatives of NAVSTA Mayport delivered a presentation on the proposed action and the process for preparing a programmatic environmental impact statement. Seven persons commented at the meeting; all expressed support for future homeporting of the CVN. Written correspondence received at, and subsequent to, the scoping meeting included nine letters and one City Council Resolution.

A public hearing was held on April 24, 1996 at 7:00 p.m. at the Fletcher Senior High School auditorium, Neptune Beach, Florida. The hearing was held during the public comment period for the Draft PEIS. There were approximately 17 individuals registered at the meeting. Two persons commented at the meeting, expressing support for future CVN homeporting at NAVSTA Mayport. Two written comment forms were received at the hearing, and 14 written comment letters and form responses were received after the meeting.

A facility study was prepared concurrently with the PEIS. This study identified the infrastructure required to support the homeporting of a CVN at NAVSTA Mayport. Several agency representatives attended joint project coordination meetings. Also, several U.S. Army Corps of Engineers-Jacksonville District representatives attended the Project Kickoff Meeting at NAVSTA Mayport on September 1, 1993. Representatives also attended the project coordination meetings and the PEIS Public Scoping Meeting.

1.5.2 Summary of Issues

The issues relevant to the PEIS process which were raised in the public scoping meeting, public hearing, and subsequent written correspondence to both meetings, are categorized and summarized below.

Dredging/Dredged Material Disposal

Further study of upland dredged material disposal sites, if proposed.
Need for dredging to -50 ft below mllw.
Compliance with relevant permit requirements.
Impacts to benthic species at ODMDS.
Status of ODMDS including potential studies required for impacts to site capacity, monitoring, and site management.
Methods of dredging and disposal of material.
Potential for onshore disposal of dredged material.

Physical Resources

Air quality impacts; emission factors; permitting and compliance with the State Implementation Plan and Clean Air Act.
Potential impacts to archeological resources at NAVSTA Mayport.
Impacts to Outstanding Florida Waters.
Impacts to National Geodetic Survey monuments.
Compliance with water quality standards; permit requirements; potential impacts due to sedimentation and salinity changes.
Information regarding thermal discharges.

Biological Resources

Potential impacts to threatened and endangered species, including manatees, sea turtles, Northern right whales, and shortnosed sturgeon.
Use of measures to protect threatened and endangered species.
Ecological integrity of the Timucuan Ecological and Historical Preserve.
Potential impacts to aquatic life from modification of wetlands and floodplains.
Potential wetland impacts.

Socioeconomic Resources

Potential relocations/displacements.
Worker safety impacts associated with facility construction and operation.
Energy conservation.
Impacts to recreational resources.

1.6 PERMIT AND COORDINATION REQUIREMENTS

This section identifies the currently applicable permits and required coordination associated with homeporting a CVN at NAVSTA Mayport. These requirements include permits for the construction and operation of facilities, and dredging and disposal of dredged material. To ensure compliance, this list will be evaluated and updated if specific projects are proposed.

Construction activities disturbing more than five acres would require a permit from EPA under the National Pollutant Discharge Elimination System (NPDES) program.

The Navy would obtain permits for regulated air emissions. Estimated emissions of NO_x are greater than *de minimis* levels, and a conformity determination would be required if the area is still classified as a maintenance area when the project is proposed.

In compliance with coastal zone management regulations, the Navy would make a Coastal Zone consistency determination.

Navy would apply for a Section 10 permit, required under the Rivers and Harbors Act of 1899, for dredging the basin and channel approaches and construction in the turning basin.

A Section 103 permit is required for transport and ocean dumping of dredged material. The U. S. Army Corps of Engineers issues the permit, with Environmental Protection Agency concurrence. Section 404 of the Clean Water Act would apply if the dredged material is deposited into navigable waters of the United States.

The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) will be asked to review and comment on the findings of this study that the activity will have no effect on endangered or threatened species.

Coordination with the USFWS and the NMFS is required by the Fish and Wildlife Coordination Act when a federal agency proposes to control or modify any body of water. Distribution of this PEIS and future documentation to the agencies will fulfill this requirement.

Construction or disturbance in an area of hazardous wastes, such as an IR site or SWMU, will require coordination with FDEP and/or EPA, and compliance with all applicable Florida Administrative Codes and the NAVSTA Mayport RCRA Permit.

1.7 ORGANIZATION OF THIS ENVIRONMENTAL IMPACT STATEMENT

This PEIS consists of a summary, table of contents, glossary, and nine sections. The summary presents the major conclusions, and issues to be resolved, including the choices among alternative actions.

Section 1.0, this section, briefly describes the underlying purpose and need for the proposed action. Section 2.0 describes the alternatives and summarizes the environmental consequences of the alternatives. Section 3.0 describes the existing (affected) environment of the Mayport area and NAVSTA Mayport. Section 4.0 discusses the environmental impact of the alternatives, including any adverse environmental effects which cannot be avoided, the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and any irreversible or irretrievable commitments of resources which would be required for CVN homeporting. Section 5.0 describes the radiological aspects of CVN homeporting. Section 6.0 documents the agency and public coordination process that took place during preparation of the PEIS. Section 7.0 lists the persons who were primarily responsible for preparing the PEIS. Section 8.0 is the PEIS distribution list. Section 9.0 is a bibliography of the references cited by the PEIS.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

This section describes the proposed action and the no action alternative. In addition, this section includes an evaluation of alternatives for the location of facilities necessary for supporting a homeported CVN, and an evaluation of alternatives for dredged material disposal. Homeporting a CVN at NAVSTA Mayport would require construction of facilities (wharf improvements, maintenance facilities, utilities) and dredging the approach channel and turning basin. Three berthing alternatives were evaluated for homeporting a CVN: Wharf C-2, Wharf F, and dual capability. Wharf C-2 is located on a peninsula where acreage for a required maintenance facility is limited. The wharf would require major structural modifications. Wharf F has space available for the required depot-level maintenance facility and parking. This wharf would need minor structural modifications. Dual capability is proposed so a CVN could berth in two places, thus, not interfering with a wharf where other ships may need to berth for maintenance or repairs. This alternative would involve developing Wharf C-2 and Wharf F to allow capabilities for berthing the CVN. Without the infrastructure, NAVSTA Mayport could not support the carrier. This section describes the alternatives and summarizes the environmental consequences of each alternative.

2.1 THE PROPOSED ACTION AND NO ACTION

Section 1011 of Public Law 102-484 requires Navy to submit a plan for development of NAVSTA Mayport as an additional United States East Coast homeport for nuclear-powered aircraft carriers. The plan submitted to Congress in April 1993 identified general requirements, including preparation of an environmental impact statement. This PEIS evaluates NAVSTA Mayport as a site for future homeporting of a CVN. The only alternative to this action is no action. By not developing the homeport scenario, all east coast CVN's would continue to be homeported at NAVSTA Norfolk. Therefore, the alternatives analysis in this PEIS evaluates carrier berthing alternatives, facilities siting alternatives, and dredged material disposal alternatives, for NAVSTA Mayport.

2.2. SUMMARY OF HOMEPORTING REQUIREMENTS

NAVSTA Mayport ship berthing facilities are provided at 15 wharves located around the perimeter of the turning basin. The turning basin is approximately 2,000 feet by 3,000 feet in size and is connected to the St. Johns River by a 500-foot wide entrance channel. NAVSTA Mayport is currently homeport for 23 ships, and will be assigned additional ships in the future. The sites evaluated for berthing the CVN are Wharf C-2 and Wharf F (also called Wharf Foxtrot). Wharf C-2 has berthed aircraft carriers assigned to NAVSTA Mayport, and Wharf F was constructed for industrial and maintenance activities. Figure 2-1 shows the locations of the wharves. NAVSTA Mayport is presently capable of supporting two conventionally-powered aircraft carriers (CV). The CVN is larger, and has a deeper draft, increased shore electrical power support requirements, and propulsion maintenance support requirements not associated with a CV. Upgrades necessary to support a nuclear-powered aircraft carrier

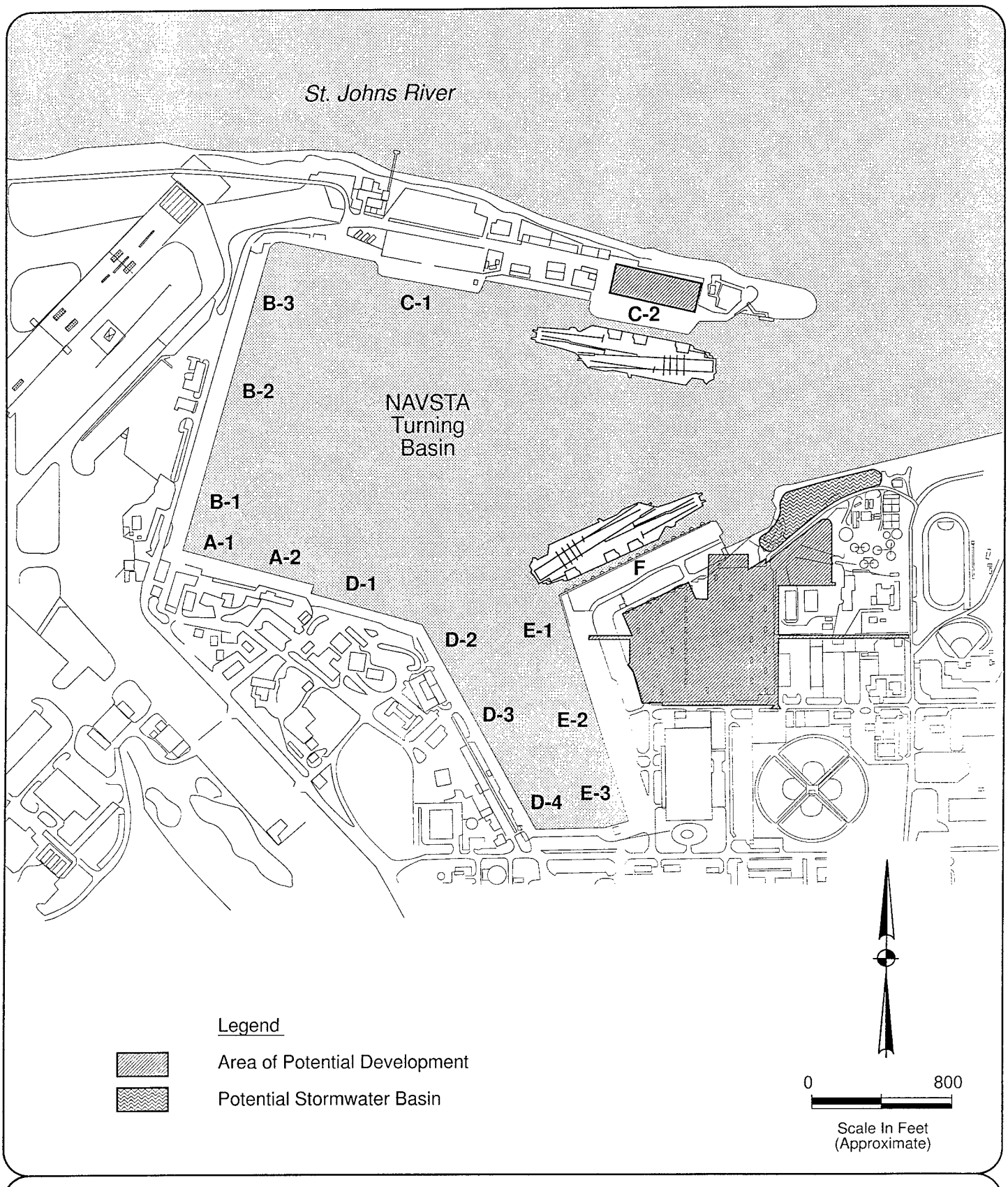


Figure 2-1. Turning Basin Area

at NAVSTA Mayport include dredging, infrastructure and wharf improvements, and construction of propulsion plant maintenance facilities.

2.2.1 Description of CVN

The CVN is larger than a CV, such as the currently homeported USS Kennedy. The approximate dimensions for the most recently commissioned CVN, in feet, are 1092 x 134 x 39. The displacement of a fully loaded CVN is approximately 21,000 tons greater than the CV, 102,000 tons versus 81,000 tons. The CVN has a requirement for a dredged depth of 50 feet below mllw due to its larger size and displacement. The ship also has nuclear propulsion system maintenance requirements and higher electrical shore power requirements.

2.2.2 Facility Requirements

2.2.2.1 Maintenance Facilities

Facilities are not currently available at NAVSTA Mayport to support depot-level repair and maintenance of CVN propulsion plant systems and components. Depot-level maintenance is performed on material requiring major maintenance or a complete rebuild of all or portions of a part. Depot-level maintenance also provides stocks of serviceable equipment by using more extensive facilities for repair than are available in lower level maintenance activities. To comply with requirements in OPNAVINST 3000.13A, Personnel Tempo of Operations, depot-level maintenance activities for ships are normally accomplished in the homeport area, to the maximum extent practicable. If propulsion plant maintenance facilities are not constructed at NAVSTA Mayport, the necessary depot-level maintenance availabilities would be accomplished at Norfolk, Virginia. Depot-level maintenance availabilities involve system upkeep and testing, lasting about six months. Sending a carrier homeported at NAVSTA Mayport to Norfolk for depot-level maintenance availabilities would involve prolonged family separations, contrary to personnel operations tempo (PERS/OP) policies and would significantly impact the "quality of life" for the crew and their families.

The depot-level maintenance facility (DMF) necessary to support the Nimitz class aircraft carrier nuclear propulsion plant maintenance is composed of three main components: Controlled Industrial Facility (CIF), Ship Maintenance Facility (SMF), and Maintenance Support Facility (MSF). The DMF and surrounding areas must be capable of supporting a work force of approximately 1,000 workers a day. This includes workers shipboard, within the facility, and the project management team.

Ship Maintenance Facility

The SMF shall be where all non-controlled propulsion plant work is performed, material is inspected and stored, and where the pure water production system is located. The SMF would house the office and shop support facilities for depot-level repair and maintenance of the carrier propulsion systems and components. The shops include shipfitter, sheetmetal, welding, and pipefitter shops. These shops manufacture and repair various ship components and equipment. The facility also contains a quality assurance non-destructive test laboratory, pure water production area, quality assurance chemistry laboratory, tool shop, electrical shop, painter shop, woodcrafter shop, and insulator shop, among others. Storage areas and administrative offices would also be located in this facility.

Controlled Industrial Facility

The CIF encompasses all radiological work to be performed at the DMF. The CIF would house the office and shop support facilities for depot-level repairs and maintenance on the controlled portion of the carrier propulsion plant systems and components. Areas within the CIF include material control, liquid processing, machining and repair, laboratory and calibration, and administrative and supervisor offices.

Maintenance Support Facility

The MSF encompasses all administrative functions for the DMF, including production supervision offices, code support offices, and project team offices, as well as material inspection and storage areas. The maintenance support building would provide for the efficient administration, management, control, and execution of depot-level repair and maintenance of propulsion plant systems and components. The facility would include work and storage areas for material/equipment shipping and receiving, supply distribution, ship stores functions, inspection of material and equipment, boxing/crating of equipment and material, hazardous waste accumulation area, quality assurance inspection, and administrative offices. There would also be space for storage of liquid waste containers and mixed waste.

2.2.2.2 Shore Facility Requirements

NAVSTA Mayport was homeport to 37 ships in 1987, including two CVs. At that time, there were 18,726 active duty personnel assigned to the station. With the USS Kennedy and 22 other homeported ships, the base loading is 13,407, or approximately 28 percent less than the 1987 peak population. With the exception of a slightly larger personnel loading, and the requirements for a maintenance facility, dredging, and utilities, the CVN shore facilities requirements are substantially similar to those required by conventional carriers homeported at NAVSTA Mayport. Since base

facilities were originally sized for the larger population (37 ships), increases in personnel due to CVN homeporting will not require additional facilities on base, if future ships assignments remain below peak levels.

2.2.3 Operational Requirements

2.2.3.1 Channel Depth

Homeporting a Nimitz class aircraft carrier at NAVSTA Mayport would require dredging of the entrance channel to Jacksonville Harbor, the St. Johns Bar Cut Range, and the NAVSTA Mayport turning basin and entrance channel (Figure 2-2). The current project depth for the entrance channel at Mayport is 42 feet below mllw, with a 5.8-foot tidal fluctuation. The length of the seaward part of the channel, extending from the midpoint of the jetties to the sea buoy, is 2.4 nautical miles. The channel depth required for a CVN is 50 feet below mllw, plus two feet over depth dredging. This depth was also determined to be the optimum dredge depth for pier/wharf berths and the turning basin.

2.2.3.2 Pierside Improvements

The wharves under consideration for berthing the carrier are Wharf C-2 and Wharf F. A structural analysis of each wharf, for the dredge depth of 50 feet below mllw and additional loadings from a 100-ton mobile crane, were analyzed and are described below (Gee and Jenson, 1994).

Wharf C-2. (Figure 2-1) The original design depth for the cellular bulkhead at Wharf C-2 was 43 feet below mllw, which was increased to 45 feet below mllw in 1988. In order to safely support the required dredged depth and the additional surcharge load, modification to the existing wharf would be required. The most economical solution to reach the desired dredge depth of 50 feet below mllw is to install a steel sheet-pile toe-wall in front of the existing bulkhead. An alternative is to use wider camels (60 to 65 feet), which would berth the carrier farther away from the wharf. This would also increase the available dockside area for support operations by eliminating the impact of carrier overhang. Other alternatives considered were construction of a riprap berm and a new sheet pile bulkhead.

The larger mooring loads require the addition of two high-wind mooring bollards (225 ton) and the addition of a mooring dolphin (100 ton) at the east end of the wharf. Modifications to the existing mooring camels are also recommended. Improvements to pierside utilities are also required and are discussed below.

Wharf F. (Figure 2-1) The wharf is constructed of 18 circular cells and was designed for a future dredge depth of 50 feet below mllw, uniform design surcharge loading of 600 psf, and a 90-ton crane. No major structural modifications would be required at Wharf F, although crane pads would be required under the outriggers to ensure that the stress in the pavement is reduced to the design load. No mooring bollards would

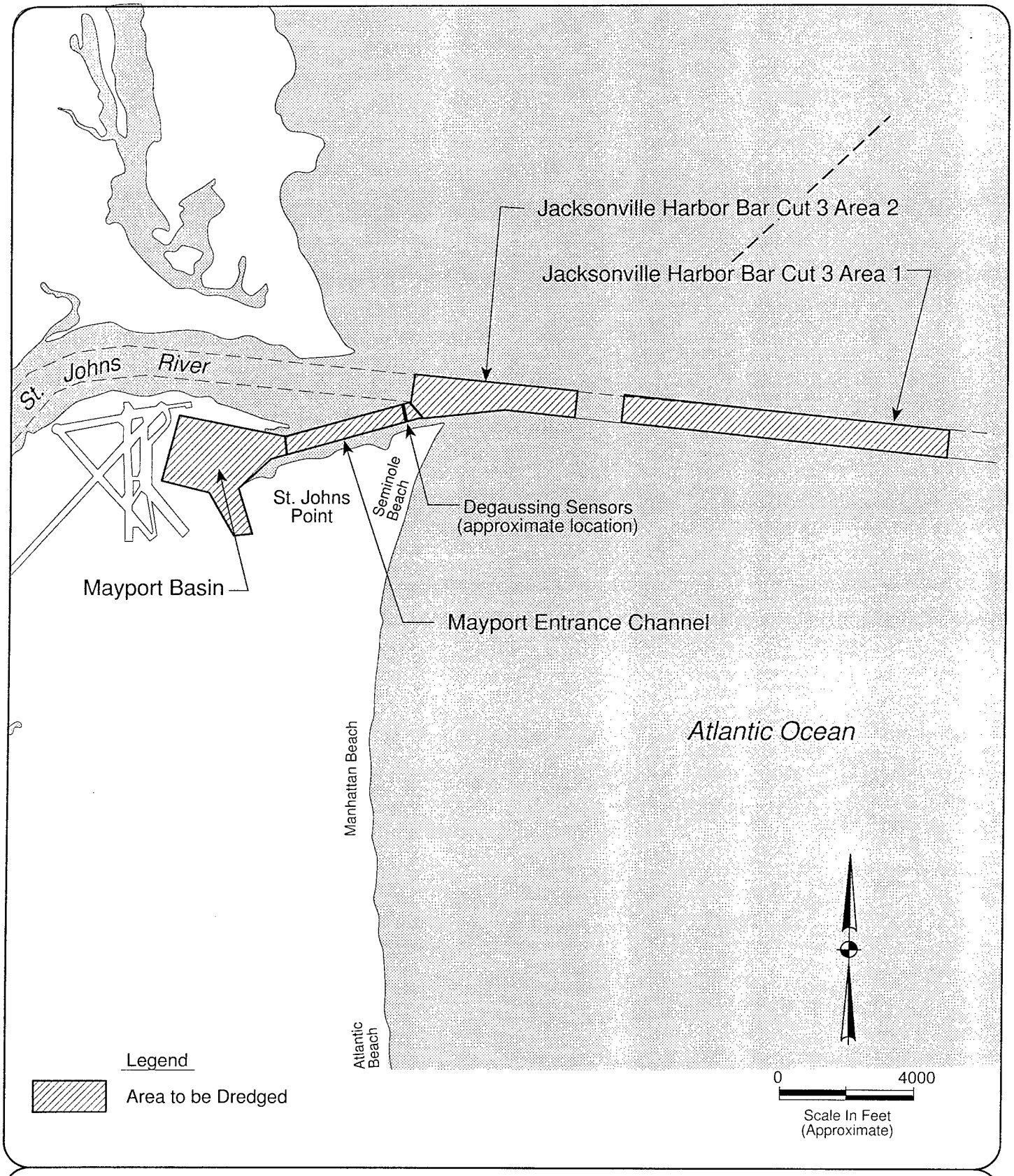


Figure 2-2. Dredging Area (USAE, 1994a; NOAA, 1990; USGS, 1982)

be required, although dredging and rework of the rock jetty will be required on the east end of the wharf. This will allow safe maneuvering of the carrier into the berth and ensure clearance along the south end of the berth. The berthing loads require that the high-wind mooring bollard at Wharf E-1 be modified by the addition of an anchor wall, to resist the forces from the carrier at Wharf F. Modifications to the existing camels are also recommended. Utility improvements are discussed below.

2.2.4 Utility Requirements

Waterfront utilities were evaluated based on the shore utility requirements described by Military Handbook 1025/2 Dockside Utilities for Ship Service. Recommendations are listed below (Gee and Jenson, 1994).

2.2.4.1 Pierside

Water (potable). Flow rate required is 1,000 gallons per minute (gpm) at 40 psi, 185,000 gallons per day (gpd). The existing potable water connections at Wharf F are adequate. Wharf C-2 will require additional water hose connections to meet potable water flow requirements.

Water (salt). A flowrate of 9,500 gpm for fire fighting and 4,100 gpm for cooling/flushing at 150 psi is required at the Wharf where the CVN is berthed during maintenance. Existing saltwater utility outlets at Wharf C-2 and Wharf F are adequate to support the CVN, although the saltwater pump station at Wharf F is out of service and the pump station at Wharf C-2 was recently decommissioned. The actual pump capacities are unknown. Pump station upgrades would be necessary to provide the required flowrates.

Water (pure). The nuclear-powered carrier requires pure water for operation of the propulsion plant. No pure water is available at either of the wharves. Pure water would be supplied by the DMF to Wharf F and by water trailers to Wharf C-2.

Steam. Flow rate required is 15,500 lb/hr (30°F outdoor temperature) for heating, and 5000 lb/hr constant, at 150 psig. The existing steam outlets at both wharves would be adequate.

Electrical. The CVN requires 30,000-kilovolt-amps (KVA). The existing 480-volt shore power facilities have a design capacity of approximately 7,500-KVA. Wharf C-2 and Wharf F would require expansion of the existing power stations and installation of new 4160-volt shore power stations would be required. Other required improvements to the on-base and off-case electrical system are discussed in Section 2.2.4.3

Communications. The telecommunications system requirement is a cable with 200 twisted pairs and 60 active lines. Wharf C-2 would require minor modifications, as would Wharf F, although it has conduits and ducts in place that will accommodate the telecommunications systems.

Sanitary Sewerage. The sanitary sewer outlets at both wharves are adequate to support a CVN.

Industrial Sewerage. Both wharves have adequate oily waste outlets.

Compressed air. Wharf F has adequate compressed air capability, but lacks a required four-inch utility outlet connection. Wharf C-2 has no compressed air supply source and would require installation of a compressed air source.

Fuel. Diesel fuel (DFM) and JP-5 (soon to be JP-8) are available at Wharf C-2. Wharf F is equipped with diesel fuel stations only. The CVN requires fuel for the airwing only, which currently uses JP-5. JP-8 fuel is being adopted for aircraft, but would probably be supplied through an existing connection.

2.2.4.2 Depot-Level Maintenance Facility

The MSF would require the following utilities (peak demand): 361 KVA electricity, 108 cfm natural gas, 300-pair cable with 140 active lines for telephone, 100 scfm low pressure air, 11,000 gallons per day water and sewer.

The SMF would require the following (peak demand): 1200 KVA electricity, 83,000 lbs/month steam, 150 pair of cables with 100 active lines for telephone, and 6.5 million scfm low pressure air, 12,000 gallons per day water and sewer.

The CIF would require the following (peak demand): 2000 KVA electricity, 1,728 lbs/hr steam, 200 pairs of cables with 100 active lines for telephone, and 2250 scfm compressed air, 4,000 gallons per day water and sewer.

2.2.4.3 Primary Electrical Site Improvements

To support the required 26.4 kilovott (kV) shore power facilities, other electrical supply improvements would be necessary. Electrical site improvements required to supply electricity to new 26.4 kV loop feeders include upgrading the existing Power Distribution Station located outside the NAVSTA main gait, and installing new 26.4 kV underground loop feeders from this station to the Carrier Substation (for Wharf C-2) or Echo Substation (for Wharf F).

To supply Wharf C-2 with 26.4 kV electricity, the existing Carrier Substation, which serves Wharves B and C, would require a new voltage regulator structure with switches. A new 26.4 kV underground loop feeder would be installed from the substation to the new power facilities at Wharf C-2

To supply Wharf F with 26.4 kV electricity, the Echo Substation would require a new voltage regulator with switches. A new 26.4 kV underground loop feeder would be installed from the substation to the new shore power facilities at Wharf F. Wharf F would require a primary loop feeder, switches and transformers.

2.2.5 Personnel

An average complement (without the airwing) for a CVN is 3,217 personnel compared to 3,115 for a conventionally-powered carrier. Carrier deployment cycles are usually one month predeployment operations, six months on cruise, and twelve months assigned to the homeport. Upon return from a six-month cruise, the ship would enter into a 30-day stand-down period, during which time approximately 50 percent of the crew would be leaving the ship for shore leave, new assignments, schools, training or discharge.

2.3 BERTHING ALTERNATIVES

The two conventionally-powered aircraft carrier Wharves C-1 and C-2 are not currently able to accommodate a CVN draft and electrical and maintenance requirements. Wharf C-2 was selected for evaluation rather than Wharf C-1 because Wharf C-2 has better opportunities for providing security. Restricting access to Wharf C-2 is feasible since it is located on the far end of the peninsula. Three berthing alternatives were evaluated: Wharf C-2, Wharf F, and a dual capability concept where both Wharf C-2 and Wharf F are used. These three alternatives and the requirements of each are described below. The Site Development Study (SOUTHDIV, 1995) is the source document for this information.

2.3.1 Alternative 1, Wharf C-2

Alternative 1 would require modifications to Wharf C-2 and construction of a controlled industrial area (CIA) for ship maintenance. Wharf C-2 is located on a narrow strip of land located between the ship channel of the St. Johns River and the turning basin (Figure 2-3). The facility footprint for this site would be 75,000 square feet. Approximately 21,900 square feet of existing waterfront transit sheds would also be available so that a total of 97,000 square feet of covered area could be utilized. Required space could be provided with a two-story design of the main facility. A crane at the wharf would be provided to accommodate large loads handled through roof hatchways in the building or loads from the ship.

The basin surrounding the wharf would require dredging to provide the required depth. The wharf is not structurally strong enough to withstand a basin depth of 50 feet below mllw. Two solutions exist; either the wharf could use wider camels (60 to 65 feet) or the wharf could be reinforced by the construction of a steel-sheet pile toe-wall in front of the bulkhead. The wider camels would allow the carrier to be set further away from the wharf, thereby decreasing the required depth directly beside the wharf. Wider camel construction would also increase the available dockside area by reducing the carrier overhang. Structural modification to the wharf would require the installation of steel sheet-pile toe-wall in front of the existing cellular bulkhead (Gee and Jenson, 1994).

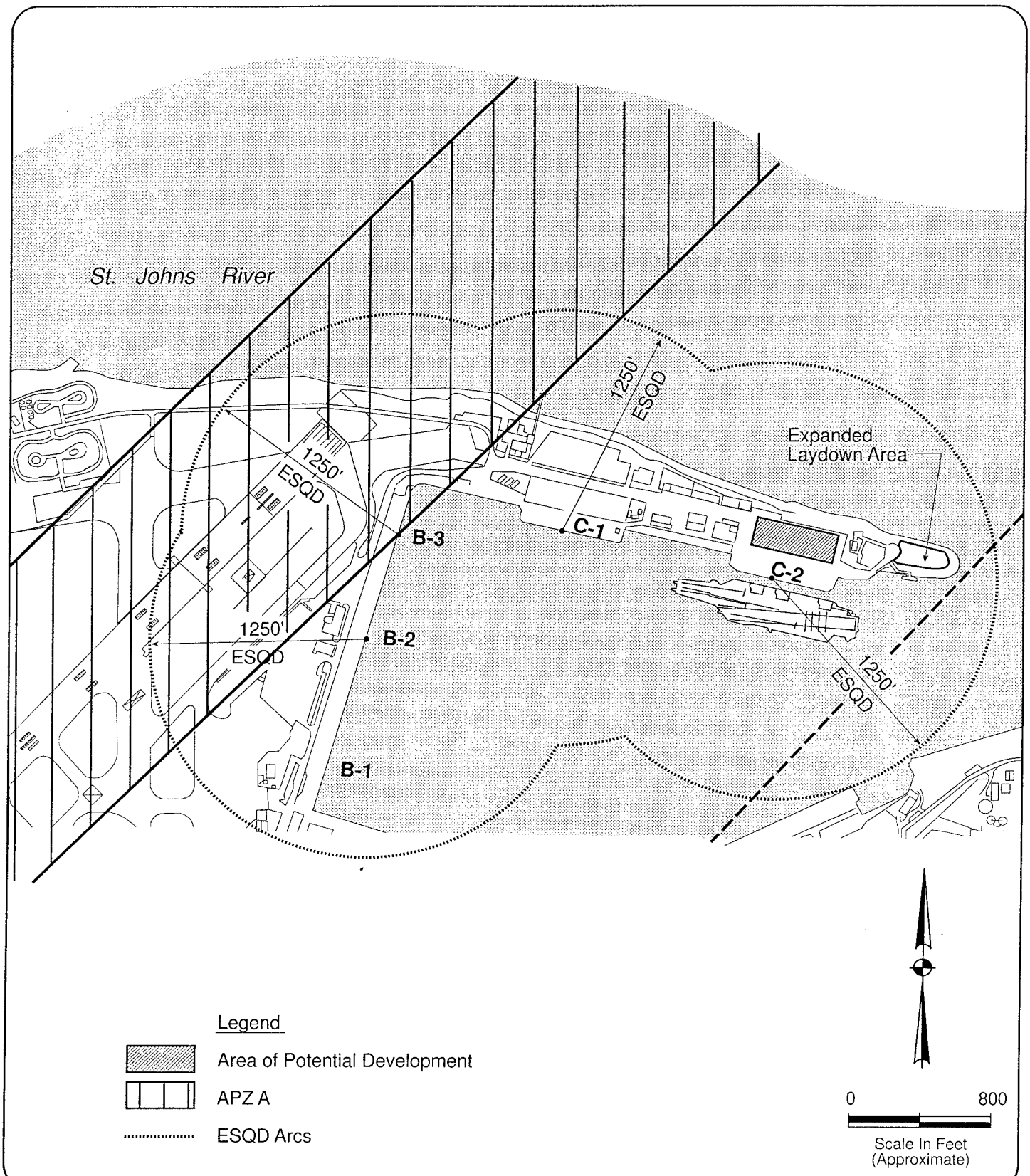


Figure 2-3. Berthing Alternative 1 - Wharf C-2 (SOUTHDIV, 1995)

Implementing Alternative 1 would also require the construction of a perimeter fence and a sentry station at the access gate. The 4160-volt shore power requirement would be met by modifying the existing substations and constructing an additional substation and regulator station (Gee and Jenson, 1994).

The area surrounding Wharf C-2 is currently approaching full utilization. Maine Street connects the wharf to the primary industrial support area. Due to access and space limitations, only one access would be provided. All pedestrian, privately owned vehicles (POV), and industrial traffic would use the same entrance, which could cause congestion and conflicts. Personnel would park over a half mile away and ride a shuttle to and from the facility. This area also lacks adequate dining facilities to accommodate the ship personnel and maintenance workers during peak ship repair activities. Security is a concern since the St. Johns River, a public waterway, is less than 100 feet from the facility.

The route to the carrier wharves along Maine Street crosses through the airfield primary surface and the Accident Potential Zone 'A' (Figure 2-3). The wharf and the ship maintenance facility would be located within the existing Explosive Safety Quantity Distance (ESQD) arcs for wharfside ordnance handling operations (Figure 2-3). Although these arcs are only in effect during ordnance handling activities, this would require all maintenance facility government employees to evacuate the building during ordnance handling activities.

The project site does not encompass any installation restoration (IR) sites. The nearest IR site is the Neutralization Pond located approximately 1,400 feet west of the area of potential development.

2.3.2 Alternative 2, Wharf F

Alternative 2 would require upgrading Wharf F to accommodate a CVN (Figure 2-4). Wharf F is a 1,050 linear foot repair wharf, constructed to accommodate many classes of surface combatant vessels during maintenance. The plan utilizes portions of 22 acres of land located behind Wharves E and F. In support of the maintenance requirements, a 245,000 square foot maintenance facility would be located directly behind Wharf F. In order to comply with security requirements, this facility would be isolated from the other industrial waterfront operations with security fencing and sentry stations. A crane at the wharf would be required to move large ship components through roof hatches in the controlled building and other loads from the ships. The turning basin would be dredged to a depth of 50 feet below mllw. Preliminary analysis indicates that structural modification of the wharf would not be needed. The 4160-volt shore power requirement would be met by modifying the existing substations and constructing an additional substation and regulator station (Gee and Jenson, 1994).

A stormwater management program would be incorporated into the project since the waterfront area would be almost completely covered by impervious pavement or

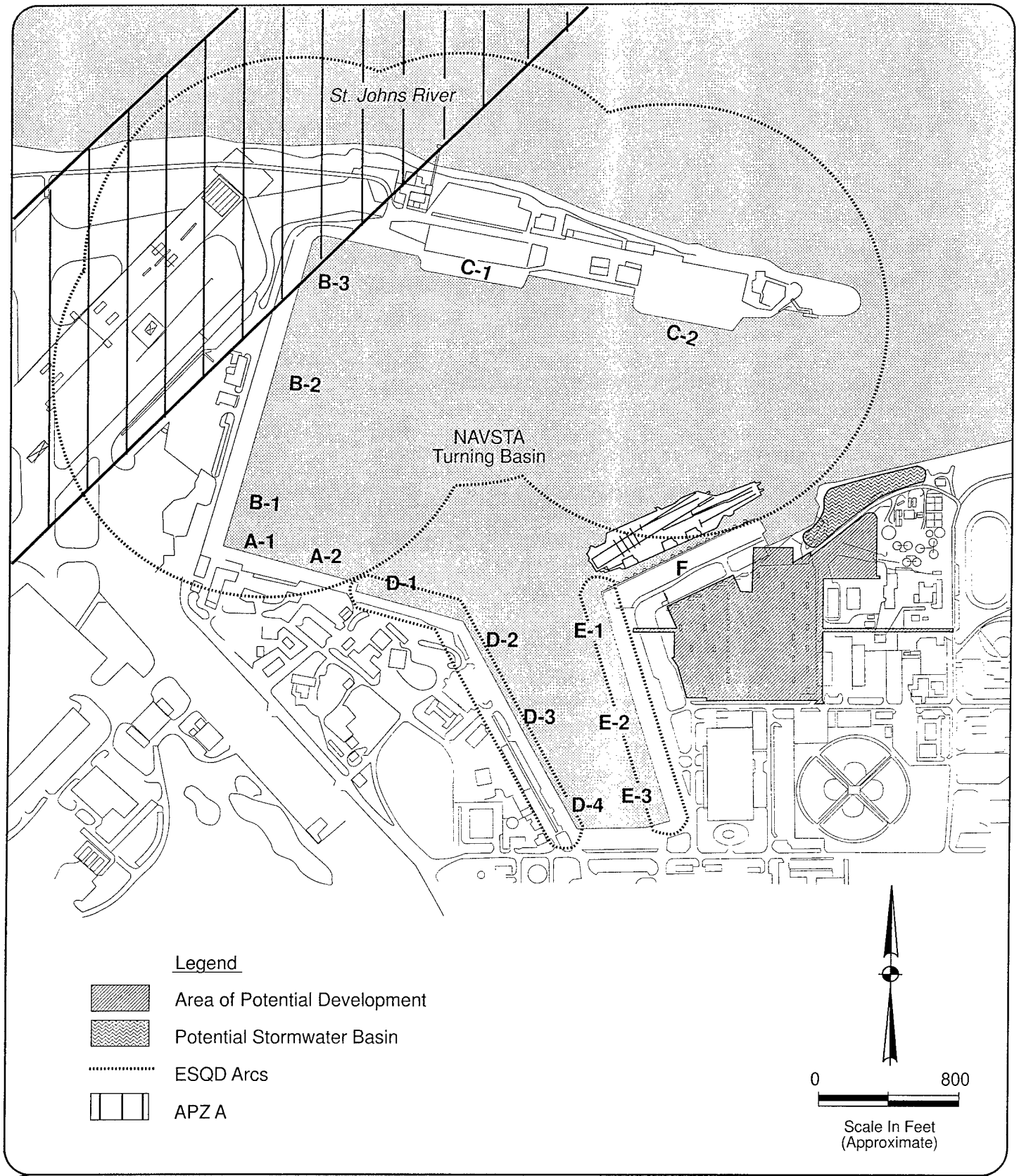


Figure 2-4. Berthing Alternative 2 - Wharf F (SOUTHDIV, 1995)

buildings. A three-acre stormwater retention area for the overall industrial complex would be developed in an area east of Wharf F, along the waterfront.

Operational work areas could be expanded for this alternative. The area around Wharf F is less congested and offers opportunities for future development. The presence of two gates would reduce congestion and conflicts between pedestrians, POV, and industrial vehicles. The facility would be configured to allow maximum POV parking in the immediate vicinity, with personnel access to the building from the parking areas. The industrial operations work would be on the opposite side of the building facing the waterfront. This alternative provides a total of 1,670 parking spaces (SOUTHDIV, 1995).

The most significant operational consideration would be the availability of the wharf for other ship repairs. If the carrier was permanently berthed at Wharf F, the wharf would not be available for repairs to other ships in the homeported fleet, or transient ships requiring emergency repairs.

During wharfside ordnance handling operations, the ESQD arc would encumber the ship maintenance facility and the POV parking areas. Although these waterfront arcs are only in effect during ordnance handling activities, maintenance buildings would have to be evacuated before wharfside ordnance handling activities could be conducted.

The POV parking lots located next to the maintenance facility would partially encompass installation restoration (IR) site 23, which is an abandoned shipyard complex. Although not an absolute constraint to future development, these sites normally require remediation activities (environmental cleanup) prior to reuse.

2.3.3 Alternative 3, Dual Capability

During the analysis and conceptual development phase, serious limitations resulting from berthing the CVN exclusively at either Wharf C-2 or Wharf F were discovered. For example, it is not feasible to accommodate all of the facilities needed to perform depot-level maintenance at Wharf C-2. Security at Wharf C-2 is a concern because the public has access from the St. Johns River to within 100 feet of the facility. The remote parking and shuttle aspect of personnel movements into this area are also a negative, as is the lack of adequate dining services for several hundred workers who may be in this facility during peak ship repair activities.

Alternative 2 also has disadvantages. As a permanent berthing wharf for the carrier, Wharf F would not be available for repairs to other ships in the homeported fleet or transients requiring emergency repairs. In addition, an IR site is located within the area that would be developed at Wharf F. This site would have to be remediated prior to any development at Wharf F.

As a result, Wharf C-2 and Wharf F will be considered for dual capability by berthing the carrier at Wharf C-2, except for those cycles when scheduled maintenance activities would be undertaken at Wharf F (Figure 2-5). This would provide greater flexibility in the utilization of Wharf F and eliminate logistical problems related to exclusive berthing at either of the two sites. To accomplish this dual capability, 4,160-volt shore power would have to be provided at both Wharf F and Wharf C-2. This could be accomplished by the utilization of mobile substation units to step down the existing 26.4 kV power.

2.3.4 Comparison of Berthing Alternatives

The three berthing alternatives are feasible options for CVN homeporting at NAVSTA Mayport. Table 2-1 summarizes the evaluation of the alternatives based on land use, environmental, and operational issues. Alternative 3 was selected as the preferred alternative primarily due to operational issues. Dual wharf capability offers the most operational flexibility, allowing berthing of the ship at Wharf C-2 and Wharf F. This allows continued use of Wharf F as an industrial wharf, even when the CVN is in port. There is adequate acreage for the maintenance facility with Alternatives 2 and 3, where the facility would be located near Wharf F. The acreage available near Wharf C-2 is not adequate for the maintenance facility. There is adequate room near Wharf F for required parking and potential expansion. Alternative 1 has limited space for parking. Security would also be better for the CVN and maintenance facility with Alternative 2 or 3.

2.4 DREDGING AND DREDGED MATERIAL DISPOSAL

Homeporting a CVN would require dredging the NAVSTA Mayport turning basin and the entrance channel to a depth of 50 feet below mllw, plus two feet over depth dredging. The entrances are currently maintained at a depth of 42 feet below mllw. Approximately 11.9 million square yards would be dredged from the entrance channels producing 3.3 million cubic yards (MCY) of dredged material (USAE, 1994a). The NAVSTA Mayport turning basin would require dredging of 2.4 MCY of material. The dredging would result in a combined total of 5.7 MCY of initial, maintenance new work dredged material. Maintenance dredging is approximately one million cubic yards every two years (USAE, 1994b). Maintenance dredging quantities may increase when the basin depth is deepened (NAVSTA Mayport, undated). Sedimentation rates have not been predicted.

The sediments in the area of new work dredging consist of clayey silt and clay. The Jacksonville District U.S. Army Corps of Engineers (USAE) recently completed a study of dredged material disposal areas for the Navy. The study evaluated upland sites in the vicinity of NAVSTA Mayport, beach nourishment, and the offshore dredged material disposal site.

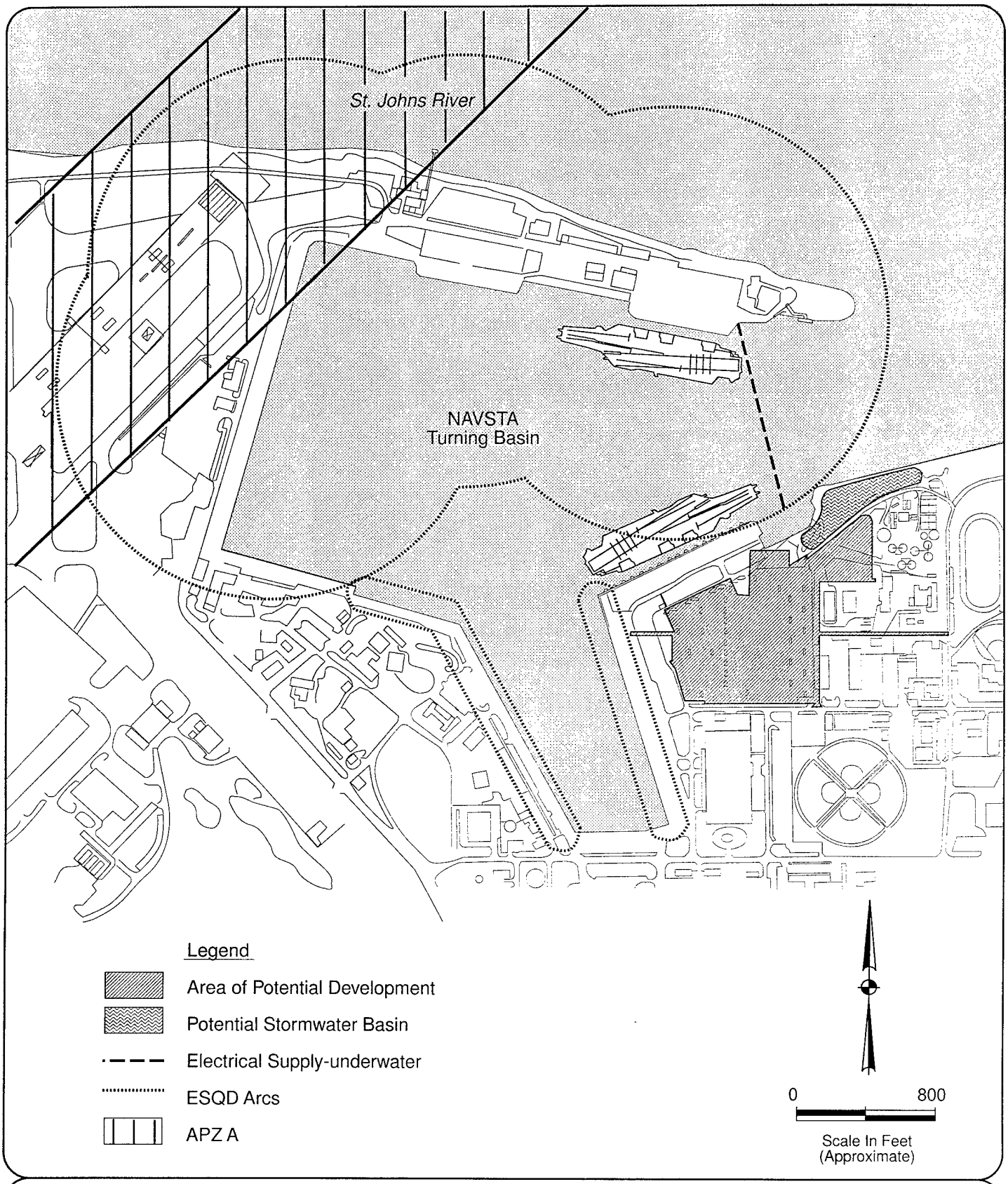


Figure 2-5. Berthing Alternative 3 - Dual Capability (SOUTHDIV, 1995)

TABLE 2-1 COMPARISON OF BERTHING ALTERNATIVES

	Alternative 1 Wharf C-2	Alternative 2 Wharf F	Alternative 3 Dual Capability
Land Use Issues			
Master Plan compatibility	Compatible	Compatible	Compatible
Room for expansion	Limited	Yes	Yes
Environmental Issues			
Trees/Vegetation	None	4 acres grass	4 acres grass
Wetlands	None	None	None
Stormwater	To basin	To basin	To basin
Soil restrictions	None	None	None
Floodplains	Yes	Yes	Yes
T&E species	None	None	None
IR sites	None	One Site	One Site
Operational Issues			
Site acreage operationally adequate	No	Yes	Yes
Access-onbase	Single access point	Adequate	Adequate
Security	May need additional security	Adequate	May need additional security for Wharf C-2
AICUZ Restrictions	Compatible	Compatible	Compatible
APZ Restrictions	Compatible	Compatible	Compatible
ESQD	Yes	No, potential	Yes
Parking	Limited	Room to expand	Room to expand
Utilities	Electrical Upgrade	Electrical Upgrade	Electrical Upgrade
Wharf structurally adequate	No	Yes	No (Wharf C-2)

Source: Developed from SOUTHDIV, 1995.

2.4.1 Dredged Material Disposal Alternatives

The dredged material disposal alternatives being considered for the potential homeporting at NAVSTA Mayport include:

- offshore dredged material disposal site (ODMDS),
- diked upland disposal,
- beach nourishment, and
- beneficial uses.

2.4.1.1 Alternatives Eliminated

Sediment quality, sediment volume, and the practicality and feasibility of disposal were considered during the evaluation of dredged material disposal alternatives. Based upon these criteria, beach nourishment and beneficial uses were eliminated from further consideration. Sediment sampling and testing conducted by the Corps of Engineers in April 1994 indicated that only 35,000 cubic yards of beach quality material would be dredged (USAE, 1994a). It would not be economical to recover this small quantity of sand for beach nourishment. Coordination with the U.S. Fish and Wildlife Service (USFWS) and the USAE indicated that no beneficial use projects are currently planned near the Jacksonville area, but could be reconsidered at a later date.

2.4.1.2 Alternatives Considered in Detail

Upland disposal and offshore dredged material disposal sites were considered in detail. The U.S. Army Corps of Engineers conducted a study of potential disposal sites including upland and offshore disposal sites (USAE, 1994a).

Offshore Disposal

The Jacksonville Ocean Dredged Material Disposal Site (ODMDS) is located approximately five miles southeast of the entrance marker for the Jacksonville Harbor Channel (Figure 2-6). The site is classified as a dispersion site and has unlimited capacity (USAE, 1994a). Sediment sampling and bioassay testing of dredged material is required by the U.S. Environmental Protection Agency (EPA) prior to authorization of offshore disposal. Samples have been taken from the Mayport turning basin and the entrance channel. The EPA has reviewed the sediment and water quality analysis from these areas and has concurred with the finding that the material is suitable for ocean disposal in the Jacksonville ODMDS in accordance with the Marine Protection Research and Sanctuaries Act. This concurrence is valid through March 1997 (EPA, 1994).

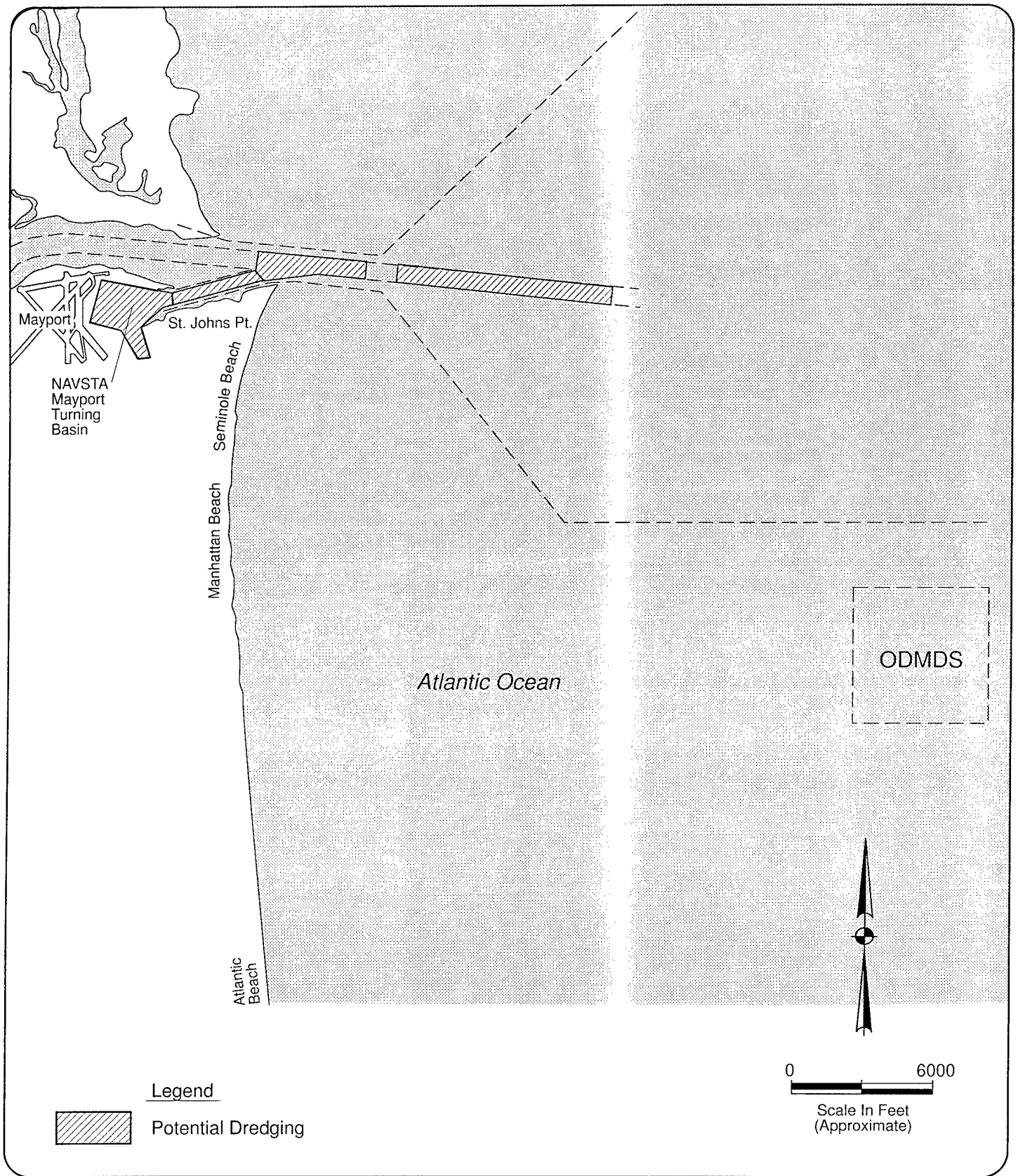


Figure 2-6. ODMDS Location (USAE, 1994a; USGS, 1982)

Upland Disposal

Upland dredged material disposal sites were evaluated by the USAE based on environmental, engineering, and economic criteria. The economic assessment included the costs to purchase the required land, construct the necessary dikes and spillways, and transport the dredged material to the upland disposal site. Fourteen possible upland sites could serve as disposal areas for this project (Figure 2-7). Development of any site would require land acquisition.

Two existing disposal areas at NAVSTA Mayport were also evaluated as potential upland disposal sites. These areas are currently full and the material would have to be removed to another location for them to be considered as potential disposal sites. EPA classifies the sites as Solid Waste Management Units (SWMU), and has jurisdiction over use or disposal of the existing material.

2.4.2 Preferred Dredged Material Disposal Alternative

The preferred alternative site for the disposal of new work and maintenance dredged material is the Jacksonville ODMDS. New work dredging would utilize both hopper dredging and the clamshell dredging methods. The dredging would take approximately 18 months (USAE, 1994a).

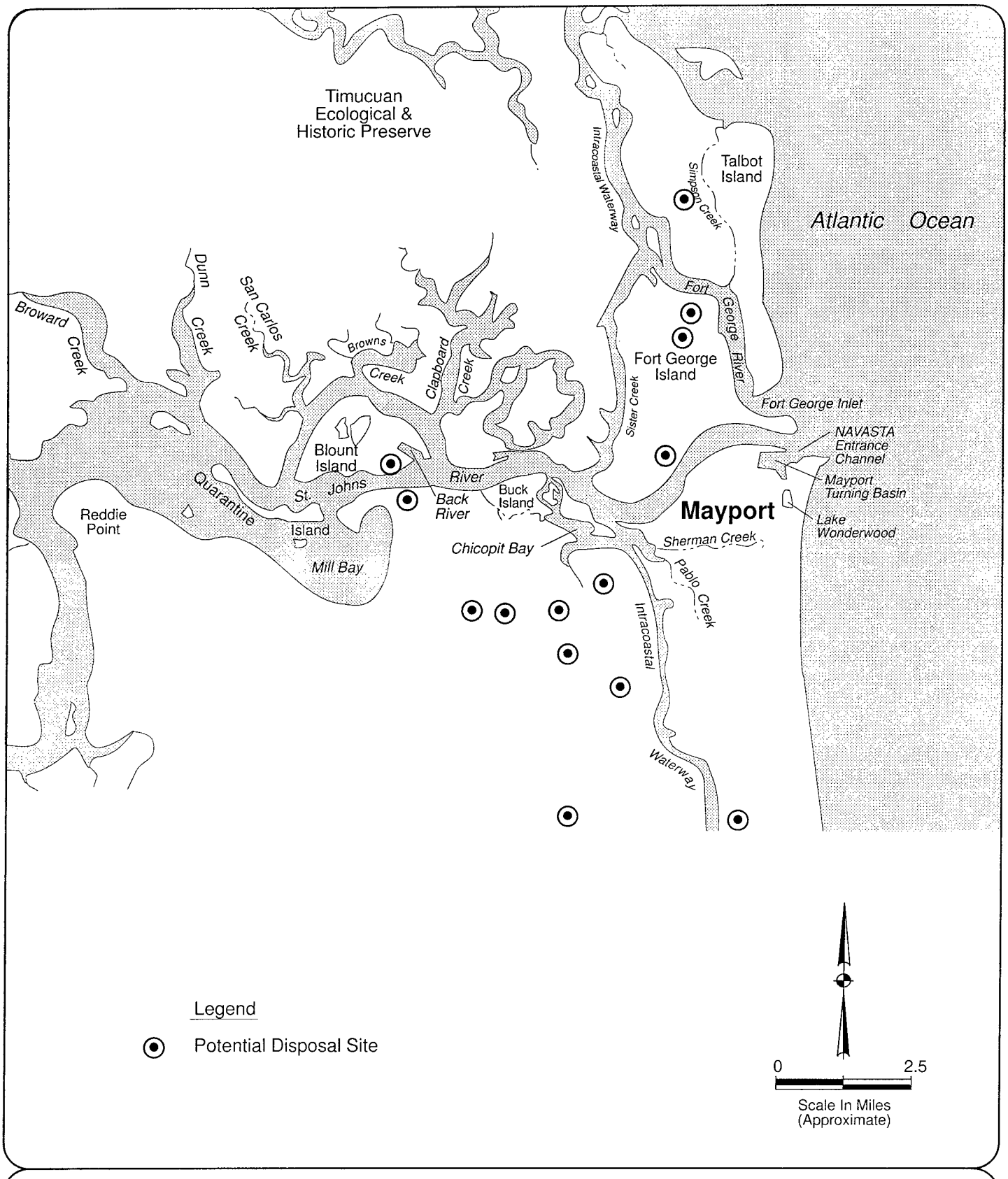


Figure 2-7. Potential Upland Disposal Sites (USAE, 1994a)

3.0 EXISTING ENVIRONMENT

3.0 EXISTING ENVIRONMENT

This section contains a description of the existing environment at NAVSTA Mayport and the surrounding area. NAVSTA Mayport is located in Duval County, Florida, near the confluence of the St. Johns River and the Atlantic Ocean, approximately 15 miles east of downtown Jacksonville. A vicinity map is presented in Figure 1-1.

Information concerning the existing environment in the vicinity of the potential project site was developed to serve as a basis for projection of environmental consequences resulting from the potential homeporting of a CVN. This information is presented below in three major segments representing the major resources of the environment: physical, biological, and socioeconomic.

3.1 PHYSICAL RESOURCES

3.1.1 Earth Resources

3.1.1.1 Physiography, Topography, and Bathymetry

NAVSTA Mayport is located in Duval County, which lies in the northeast corner of Florida. The county is bordered by the Nassau River and Nassau County to the north, Baker County to the west, Clay and St. Johns counties to the south, and the Atlantic Ocean to the east. The dominant physiographic feature within the county is the St. Johns River, which runs roughly north-south from the southern regions of the county to approximately 18 miles north, where the river turns east towards the Atlantic Ocean (Figure 1-1).

Topography of NAVSTA Mayport is relatively flat with elevations generally ranging from ten feet above to six feet below mean sea level (msl), as presented in Figure 3-1. Slightly higher areas include a small hill along the Alpha wharves and a sandy ridge just east of Baltimore Street. The hill along the Alpha wharves is presently the site of the NAVSTA Mayport Administration and the Harbor Operations buildings while the ridge east of Baltimore Street is the site of the Coast Guard lighthouse (SOUTHDIV, 1989). The land surface elevation at the potential depot-level maintenance facility for Alternative 1 is over 10 feet, but less than 14 feet above msl. The land surface elevation of the depot-level maintenance facility site for Alternatives 2 and 3 range from six to ten feet above msl. The 500-year flood elevation at NAVSTA Mayport is 13.2 feet above msl (NAVSTA Mayport, 1994a). All facility construction is proposed to be above the 500-year flood elevation.

NAVSTA Mayport is located on the southern bank of the St. Johns River at the mouth. The mouth of the St. Johns River is approximately 2,900 feet wide. Two jetties, one on either side of the river, extend into the Atlantic Ocean approximately 3,700 feet. The dredged portion of the entrance channel, composed of the St. Johns Bar Cut Range East and West sections, begins 2.4 miles east of St. Johns Point (Figure 2-2). Depths for the entrance channel range from 41.7 to 40.4 feet below mllw in the East Section

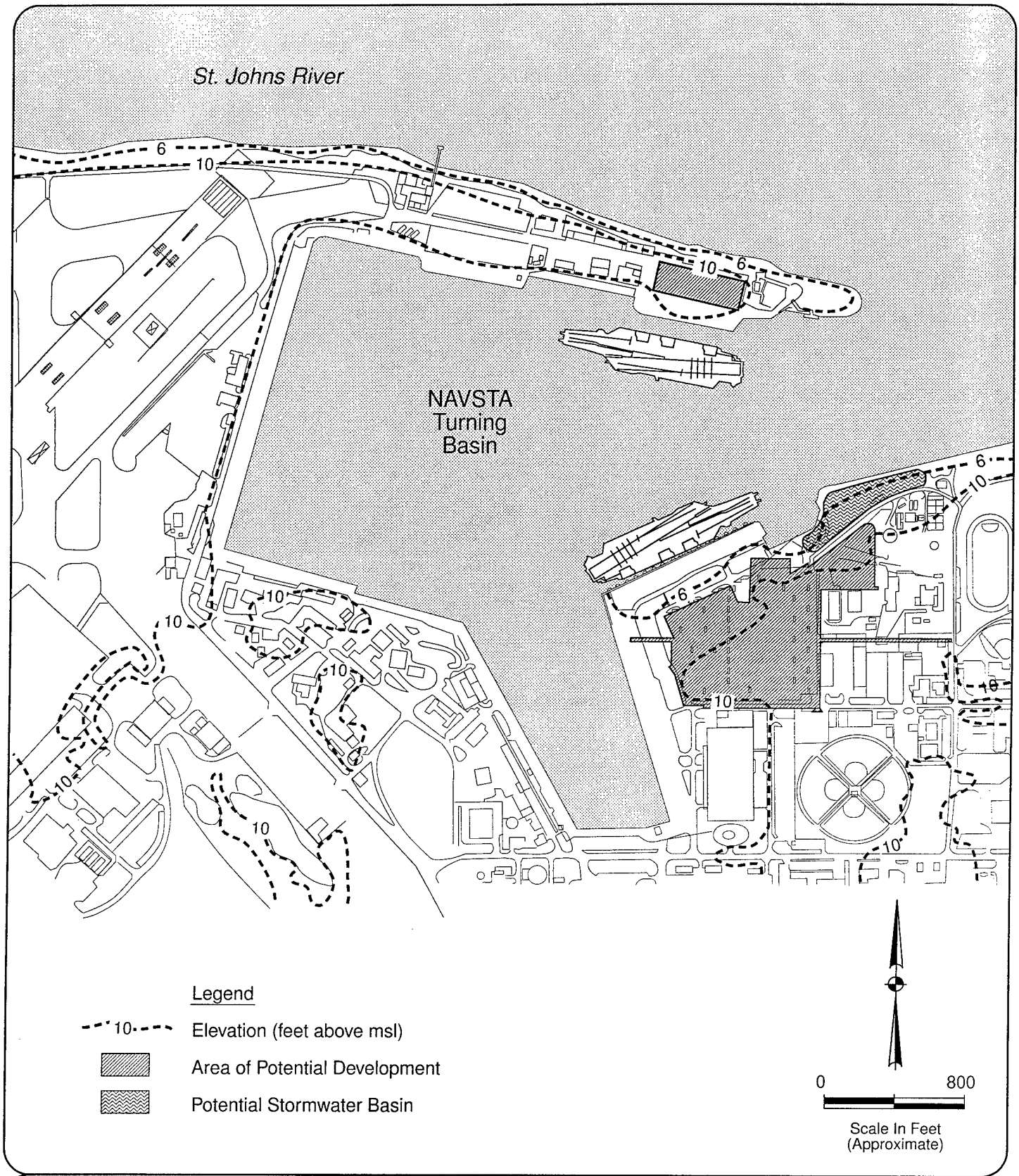


Figure 3-1. NAVSTA Mayport Topographic Map (SOUTHDIV, 1989)

to 38.0 feet below mllw in the West Section. Access to the NAVSTA Mayport turning basin is provided by a 500-foot wide, 42-foot deep, 4,500-foot long entrance channel which intersects the St. Johns Bar Cut Range at an angle of 22.5 degrees (Navy, no date). Design depths within the NAVSTA Mayport turning basin range from 30 feet below mllw to 50 feet below mllw. Water depth at Wharf F and Wharf C-2 is approximately 44 feet below mllw, which includes the 42-foot design depth plus 2 feet overdredge. Maintenance dredging for the basin occurs approximately every two years, with the next cycle scheduled for December 1996 (NAVSTA Mayport, 1994a). Bathymetry for these channels and the NAVSTA Mayport turning basin is presented in Figure 3-2.

3.1.1.2 Soils and Geology

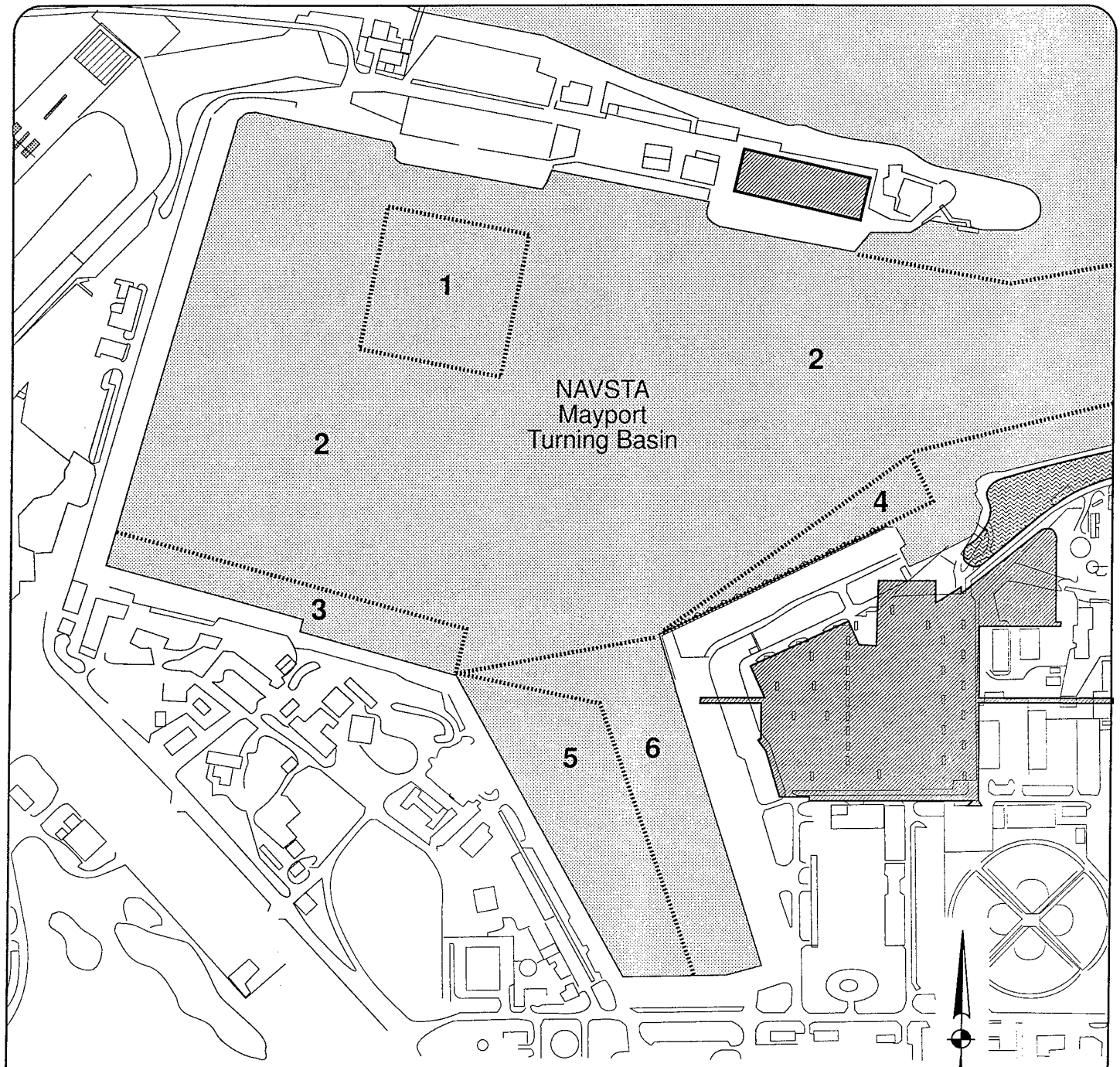
NAVSTA Mayport and the vicinity fall within the coastal lowland physiographic division of northeastern Florida, which roughly parallels the coastline and extends from the Atlantic Ocean to west of downtown Jacksonville. The surface and near surface deposits in this division are composed of unconsolidated medium to fine sands, coquina, and poorly to moderately-indurated sandy dolomites. Five lithologic units are recognized in this division: 1) limestone; 2) dolomite; 3) shell, sand, and clay; 4) clayey sand; and 5) medium to fine sand and silt. The limestone and dolomite units do not appear as surface deposits in the Mayport vicinity (SOUTHDIV, 1989).

The soil types at NAVSTA Mayport are not natural native residual soil, but disturbed soil developed from dredging. Most of NAVSTA Mayport has been built up by dredged material derived from the St. Johns River and the Mayport turning basin. The dredged materials include sand, silt, and clay. The soils found at NAVSTA Mayport are highly permeable and tend to be low in organic content and available water (SOUTHDIV, 1989). None of the soils found at NAVSTA Mayport are classified as prime or unique farmland (SCS, 1994). Soils at NAVSTA Mayport can be roughly grouped according to location and major characteristics. A location map for the soil units is presented in Figure 3-3.

Aquic Quartzipsamments comprise the soil located behind Wharf F, which is the site for potential facilities development Berthing Alternatives 2 and 3. The soil located behind Wharf C-2, Berthing Alternative 1, is classified as Albany fine sand.

The Aquic Quartzipsamments and Arents soils comprise most of the large, developed areas at NAVSTA Mayport, including the golf course, runway areas and adjacent clear zones. These soils are generally characterized as having been reworked by earth moving operations such as excavation and fill.

The Beaches, Fripp fine sand and the Kureb fine sand, both with slopes ranging from two to eight percent, occur along the Atlantic beaches and the dune and ridge areas immediately behind the beaches. These fine sands are characterized by a water table depth of over six feet in natural conditions.



Area	Project Depth *	Allowable Overdepth
1	50	1
2	42	2
3	35	1
4	42	1
5	30	2
6	35	2

* Depth: Feet below mllw

Figure 3-2. NAVSTA Mayport Turning Basin Bathymetry (Department of the Army, 1994)

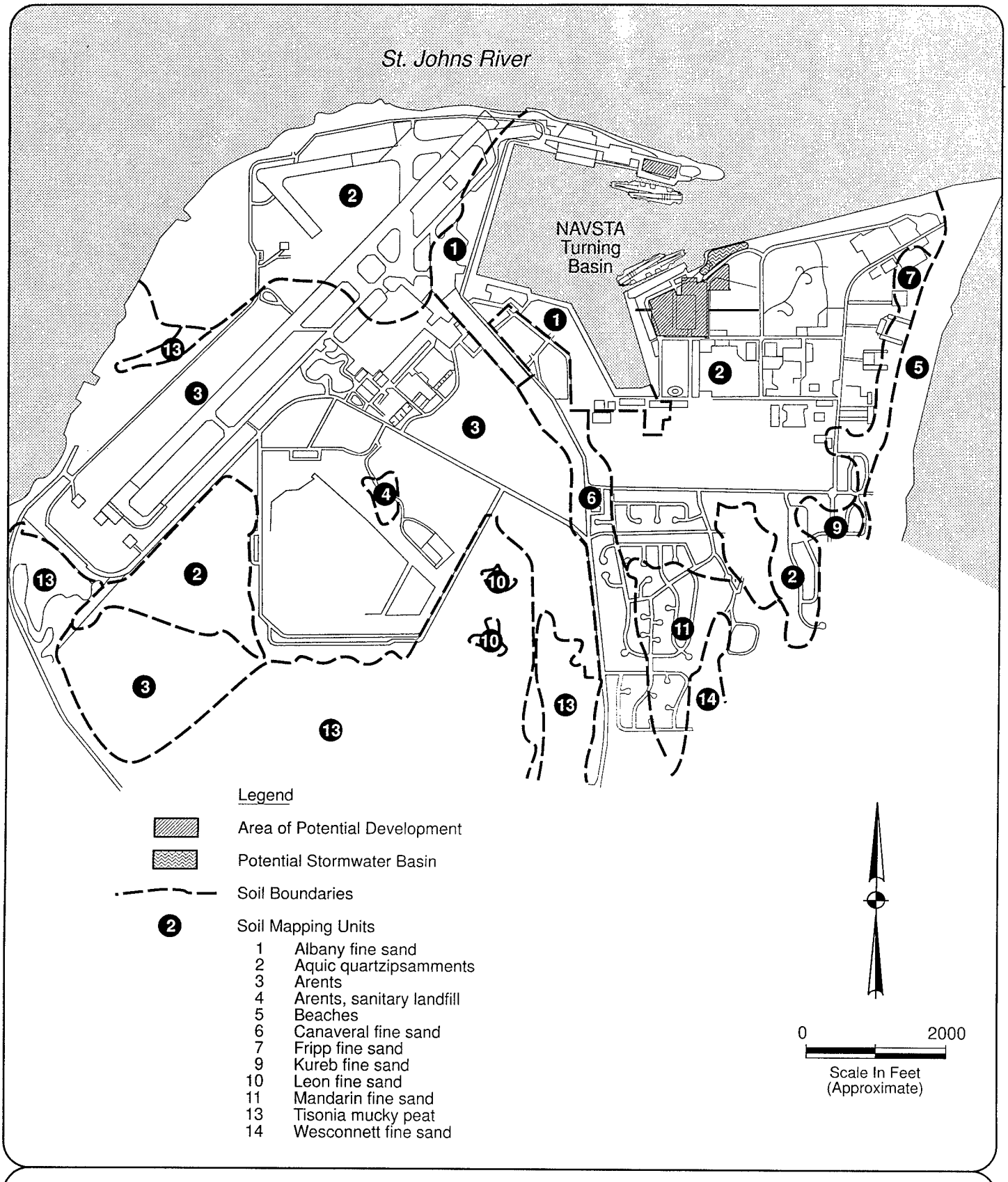


Figure 3-3. Soils Location Map (SOUTHDIV, 1989)

The Leon and Mandarin fine sands are generally found further inland from the Fripp and Kureb sands in broad flatwood areas, on ridges, and on isolated knolls. These soils tend to have a moderate water table depth ranging between 10 and 60 inches, depending on the season. Much of the area at NAVSTA Mayport in which these soil groups occur is heavily vegetated.

The Tisonia mucky peat and Wesconnett fine sand are soils associated with wetland areas at NAVSTA Mayport. These soils are characterized by a water table depth of less than ten inches and, in many instances, are covered by water for all or a portion of the year (SOUTHDIV, 1989).

Seismicity

Research and available information concerning seismicity in Florida is limited and no site-specific studies have been conducted in the Jacksonville area. However, two publications summarizing seismic events/earthquakes in Florida have been written: 1) "Earthquakes in Florida" by Charles Mott, published in 1983; and 2) "History of Seismological Activity in Florida" by Drs. Douglas Smith and Anthony Randazzo, published in 1989. The publication by Mott summarized information from all available sources, including scientific measurements and anecdotal reports, and reported a total of 33 events. However, Mott discounted many of these events as non-seismic. Smith and Randazzo found that all reported events have occurred in northern Florida. Two seismic events were recorded in 1879 and 1893. These events are estimated to have been less than five on the modified Marchatic Scale. The 1879 event affected a large portion of northern Florida whereas the 1893 earthquake produced more local seismic effects. Two small events were recorded using scientific instrumentation in Daytona in 1973, and the Sanford/Melbourne area in 1975. However, Smith and Randazzo believe the epicenter of this event was in the vicinity of Savannah, Georgia. The measured events registered approximately 3.0 (1973) and 3.9 (1975), on the Richter Scale (SOUTHDIV, 1993). No correlation between the intensity of the events discussed can be made because the Richter scale measurements are based upon energy calculations and the Marchatic scale measurements are based upon reports of land movement.

3.1.2 Air Resources

3.1.2.1 Climatology

The presence of coastal winds and moderate temperatures create a semi-tropic to temperate climate in northern coastal Florida. Predominant sea breezes and afternoon thundershowers during the summer months keep temperatures at the mid- to upper-80's °F (Fahrenheit). During the coolest three months, December, January, and February, the average temperature is recorded in the mid-50's°F. Average annual temperature for the region is 69°F with temperatures exceeding 95 °F about ten times a year (SOUTHDIV, 1993).

Wind speeds average less than nine miles per hour with slightly higher wind speeds recorded in the spring. While southwesterly winds prevail in the spring and summer, northeasterly winds prevail in the fall and winter months (SOUTHDIV, 1993).

The average relative humidity in the vicinity of NAVSTA Mayport is approximately 75 percent, typically ranging from 90 percent early in the morning to 55 percent during the afternoon. Summer afternoon thunderstorms are typical in the Jacksonville area with a measurable amount of rain falling one day in two. Average rainfall in the Jacksonville area is approximately 53 inches per year, with the majority of precipitation occurring during the summer season. Rainfalls of several inches are infrequent, and normally associated with tropical storms or hurricanes (SOUTHDIV, 1993).

Hurricanes

The months of June through November are considered the hurricane season. The major threat during July, August, and September is from westerly moving storms originating in the Atlantic Ocean. During October and November, the major threat is storms originating from the Western Caribbean and Gulf of Mexico.

Hurricane Dora in 1964 hit the northeast coast of Florida with winds of 125 and 93 mph recorded at St. Augustine and NAVSTA Mayport, respectively. This is the only fully developed hurricane to approach the Mayport vicinity from the Atlantic Ocean during the last 100 years.

Tornadoes accompany nearly all tropical cyclones that come into Florida and occur in the outer edge of the hurricane circulation or near the central vortex. Tornadoes and waterspouts may also be associated with thunderstorms, particularly during August and September.

3.1.2.2 Air Quality

NAVSTA Mayport is currently operating in compliance with all applicable substantive and administrative requirements for air pollution control (City of Jacksonville, 1995). NAVSTA Mayport is currently applying for a Title V operating permit in accordance with the 1990 Amendments to the Clean Air Act.

Duval County is classified by EPA as attainment for ozone, nitrogen oxides (NO_x), and carbon monoxide (CO). It is unclassified for particulate matter, sulfur dioxide and lead. EPA redesignated the Duval County area from transitional nonattainment to attainment for ozone on March 6, 1995. The county has an approved 10-year maintenance plan for ozone reduction. Due to its status as an ozone maintenance area, the proposed action at NAVSTA Mayport must conform to the State Implementation Plan (SIP), according to the 1993 Conformity Rule (40 CFR Parts 6, 51, 93). According to the rule, federal actions must not (1) cause or contribute to any new violation of any standards or (2) increase the frequency or severity of any existing violation, or (3) delay timely attainment of any standard or required interim milestone. It is the responsibility of the

Navy to demonstrate that the emissions associated with the proposed action will conform to the applicable implementation plan goals of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) and of achieving expeditious attainment of these standards. The conformity applicability analysis is required to determine whether the projected values for emissions of the ozone precursors NOx and volatile organic compounds (VOC) are below the *de minimis* levels specified in the SIP. The *de minimis* levels specified for both NOx and VOC emissions are 100 tons/yr.

3.1.3 Noise

The sound environment in the vicinity of NAVSTA Mayport is affected primarily by military aircraft operations and, on a smaller scale, by urban noise such as traffic and construction (SOUTHDIV, 1992). Military aircraft and weapon systems are exempt from the Federal Noise Control Act. Commercial jet traffic, lawn mowers, and ship traffic also contribute to noise in the Mayport area. The Navy has programs to protect base personnel and visitors from hazardous noise levels, in compliance with Occupational Safety and Health Administration (OSHA) noise level requirements. The Navy employs noise control and abatement measures during operations.

3.1.4 Water Resources

3.1.4.1 Surface Freshwater

According to FDEP, the demarcation between fresh and brackish water in the St. Johns River occurs at the Buckman Bridge, approximately 30 miles upstream from NAVSTA Mayport. Upstream from the Buckman Bridge, the St. Johns River is the dominant freshwater feature in the Jacksonville area. No surface freshwater features exist at NAVSTA Mayport.

3.1.4.2 Groundwater

Regional

The southeast Georgia/northeast Florida area, including NAVSTA Mayport, is underlain by two aquifers: the Surficial aquifer system and the Floridan aquifer system. A third aquifer system, the Southeastern Coastal Plain aquifer system, underlies the Floridan aquifer system in southeast Georgia, portions of northeast Florida, and the Florida panhandle.

The Surficial aquifer is composed of Holocene through Miocene deposits and contains water mostly under unconfined (water table) conditions. These deposits consist of a thin, widespread layer of unconsolidated sand beds that commonly contain shale and limestone. This aquifer system generally yields small volumes of water, and is used primarily for domestic water supplies.

The Floridan aquifer system consists of a thick sequence of late Paleocene to early Miocene carbonate rocks and is the most productive aquifer in the southeastern United States. This aquifer system is the principal source of fresh water in northeast Florida. The Floridan aquifer supplies water primarily for municipal and agricultural purposes. The Floridan aquifer system underlies the Surficial aquifer and is separated from it by a clayey confining layer unit which is thick in some places and thin, or absent, in others. The formations that comprise the Floridan aquifer, are from oldest to youngest, the Oldsmar Limestone, the Lake City Limestone, the Avon Park Limestone, the Ocala Limestone, and several thin, discontinuous aquifers of the Hawthorne Formation, which are hydraulically connected to the rest of the system.

The Floridan aquifer system can generally be divided into an Upper Floridan Aquifer and a Lower Floridan Aquifer, separated by a less permeable confining unit of highly variable properties.

NAVSTA Mayport

NAVSTA Mayport is underlain by three water-bearing zones: the Surficial aquifer, the Shallow Rock aquifer, and the Floridan aquifer system. The Surficial aquifer consists generally of unconsolidated sands with varying amounts of clay and silt and extends to an approximate depth of 50 feet below land surface. Recharge to the Surficial aquifer is through precipitation. Shallow groundwater at NAVSTA Mayport flows from topographic highs to the adjacent St. Johns River, the ocean, and surrounding low marsh areas. The Shallow Rock aquifer underlies the Surficial aquifer and consists of permeable deposits of sand, shell, and limestone within and below the Hawthorne Formation. The depth to the top of this aquifer is approximately 50 feet. The general direction of groundwater flow in this aquifer is to the southeast. The top surface of the Floridan aquifer begins at approximately 400 to 420 below land surface. This aquifer system is separated from the Shallow Rock aquifer by a confining layer of clay, marl, and sandy clay material approximately 200 feet thick. The Floridan aquifer consists of dark gray to greenish gray, hard, weathered limestone. Groundwater flow in the aquifer is thought to be generally toward areas of heavy groundwater withdrawal in Jacksonville. However, the cones of depression created by groundwater pumping makes it difficult to predict the direction of local flow in the aquifer. Very little recharge in the Floridan aquifer occurs in the Duval County area. Recharge to the aquifer is from up-dip to the west, where units of the aquifer are close to the surface (SOUTHDIV, 1991).

Groundwater Quality

Groundwater quality data are collected by the U.S. Geological Survey (USGS) at two wells in the vicinity of NAVSTA Mayport. One well is located directly northwest of NAVSTA Mayport and the second is located south of NAVSTA Mayport, in the Hanna Park housing area. Water quality parameters monitored at these wells are: elevation, specific conductance, pH, temperature, hardness, calcium, magnesium, sodium, potassium, alkalinity, sulfate, chloride, fluoride, silica, and strontium. State hardness

standards have been exceeded during one of thirteen samplings conducted at both wells (SOUTHDIV, 1993).

Background groundwater quality data assembled for the Resource Conservation and Recovery Act (RCRA) study at NAVSTA Mayport were collected from two existing wells located at the station. Groundwater in the unconfined Surficial aquifer beneath NAVSTA Mayport is defined as Class G-II, potable use groundwater. Parameters monitored were: total dissolved solids, chloride, sulfide, and sulfate. All sampling results were within the Class G-II standards. However, the RCRA study states that most other groundwater samples collected at specific areas of concern, for comparison and background, did not meet these standards. No volatile organic carbons in exceedance of state primary drinking water standards were detected in the groundwater sampling program and no pesticides or polychlorinated biphenols were detected in any sample. Inorganic compounds (arsenic, barium, copper, lead, selenium, vanadium, zinc, and cyanide) were detected in low concentrations. Carbon disulfide and benzo(a)anthracene were the organic compounds detected. In general, groundwater quality on the station, as defined by USGS sample results and/or described in the RCRA study, is acceptable for use as potable (Class II) groundwater (SOUTHDIV, 1993).

3.1.4.3 Marine Waters

Major surface water features in the vicinity of NAVSTA Mayport include the Atlantic Ocean to the east and the St. Johns River to the north, as shown by Figure 1-1. Within NAVSTA Mayport, surface water features include the turning basin in the north central portion of the station, an extensive area of tidal marsh and the Atlantic Intracoastal Waterway (AIWW) in the south and southwest portion, and Lake Wonderwood in the southeast portion. The NAVSTA Mayport turning basin was created during the 1940's by dredging the eastern part of Ribault Bay. The turning basin was redredged to a depth of 40 feet below msl in 1952, and the dredged material was placed adjacent to the basin as fill. The twenty-acre Lake Wonderwood is a manmade lake that was dredged to provide fill for site development. The St. Johns River is tidal, with a stage level of 8.3 feet over flood plain of up to 10 miles in width.

Outstanding Florida Waters (OFW) are designated by the state of Florida, and are protected by Florida Statute 403.061(27) because of their natural attributes. The waters within the Timucuan Preserve and the Nassau River - St. Johns River Marshes Aquatic Preserve are designated OFWs. The boundary of the OFW crosses the St. Johns River just upstream from the NAVSTA Mayport basin and continues across the river, following the shoreline of Huguenot Park.

Tides and Currents

The tide at the St. Johns River entrance is a mixed tide, meaning that it consists of an alternating cycle of higher and lower 12.42 hour variations. In the vicinity of a typical inlet the tide is expected to undergo greater change with distance than in any other

part of a river (Morris, 1993). The mean and spring tidal ranges at the south jetty of the ocean entrance are 4.9 feet and 5.7 feet, respectively. The mean and spring ranges within the NAVSTA Mayport basin are 4.5 feet and 5.3 feet, respectively. The same forces that generate tidal water levels also generate tidal currents (Morris, 1993). Average flow is estimated by USGS to be 8,300 cubic feet per second (SOUTHDIV, 1993).

Marine Water Quality

Surface water quality in the vicinity of NAVSTA Mayport has been monitored by the FDEP. Specific studies of surface water quality in background and special areas of concern have been conducted on NAVSTA Mayport, as part of Phase I Resource Conservation and Recovery Act (RCRA) facility investigation (RFI).

Surface water quality of the St. Johns River varies from "good" to "poor", with "good" water quality south of Jacksonville and in the upper portions of tributaries to the river. Poor water quality occurs in areas adjacent to residential and commercial development. Marine waters in the Jacksonville area have the lowest overall local water quality. Water quality parameters of particular concern in areas of "poor" quality are elevated nutrient concentrations, low dissolved oxygen levels, and elevated levels of bacteria. In addition, state standards have been exceeded for concentrations of cadmium, copper, chromium, mercury, and lead at river water quality monitoring stations in the vicinity of NAVSTA Mayport. All waters of the LSJRB are classified as either Class II (i.e. shellfish propogation or harvesting) or Class III (i.e. recreation and propagation and maintenance of a healthy, well-balanced population of fish and wildlife). The only site evaluated and designated as Class II waters within the LSJRB is the Duval County shellfish harvesting area at the mouth of the St. Johns River (SJRWMD, 1994).

Surface water quality sampling conducted on NAVSTA Mayport during the RFI included sampling and analysis for the following parameters: total dissolved solids, anions, alkalinity, nitrogen, phosphorous total organic carbon, pH, oil and grease, and metals. Sampling was conducted in 1992, and concentrations reported were within state standards for Class III waters, as the surface waters are classified. The inorganics arsenic, barium, cadmium, chromium, copper, lead selenium, vanadium, and cyanide, were detected in surface waters (SOUTHDIV, 1993).

Salinity

The entire lower St. Johns River, defined as the northern part of the St. Johns River from the mouth of the Ocklawaha River in Putnam County to the inlet at the Atlantic Ocean in Duval County, is tidally influenced. Salinity intrusion occurs under normal freshwater discharge and varies with ebb and flow of the tides. Depth-averaged salinities within the St. Johns River near the Atlantic Ocean vary from 33 parts per thousand (ppt) during flood flow to 15 to 26 ppt during ebb flow, depending on tidal range and freshwater flow conditions. At a point 30 miles upstream from its ocean entrance, surface salinities vary from one to five ppt, again depending on tidal range

and freshwater flow conditions. Estuaries in the area are partially mixed. Differences of four to eight ppt between surface and bottom salinities occur at the ocean entrance, depending on freshwater discharge conditions and tidal phase (Navy, no date).

3.1.5 Cultural Resources

A comprehensive survey was conducted during August 1993 to determine the extent and location of cultural resources on NAVSTA Mayport. Two archeological resources were located on the west side of the turning basin. These sites are a previously disturbed Indian burial mound and a shell midden. The St. John's Lighthouse, located on the northwest section of the naval station, is a historic structure listed in the National Register of Historic Places. No underwater cultural resources are known to exist within the turning basin or at the offshore dredged material disposal site. Other resources in the area are the Huguenot Historic Memorial, located north of the St. Johns River across from NAVSTA Mayport, and the Fort Caroline National Memorial located on the south side of the river to the west of the station (Figure 1-1).

3.2 BIOLOGICAL RESOURCES

NAVSTA Mayport is located within the Lower St. Johns River Basin (LSJRB), which is situated at the boundary of the warm temperate and subtropical regions of the eastern United States, near the southern limits of the "Carolinean" biotic province. This province extends from Cape Hatteras to Cape Canaveral (St. Johns River Water Management District [SJRWMD], 1992). Many terrestrial and aquatic organisms reach their northern or southern limit of distribution in this area.

State and local agencies have recently initiated planning for several studies for the NAVSTA Mayport area. These studies include: 1) a complete site biological study consisting of approximately 33 data sites, each involving development of existing conditions, chemical testing, and quantitative studies; 2) wetlands delineations and map digitization; 3) ODMDS (offshore dredged material disposal site) survey, sediment analysis, site characterization, and the collection of other pertinent data; and 4) threatened and endangered species.

3.2.1 Terrestrial Systems

Terrestrial biological resources at NAVSTA Mayport cover approximately 1,150 acres, the majority of which are within and around on-base housing, golf course, and mowed areas. Less than 300 acres of the station are defined as native terrestrial vegetation and/or forestry areas. The north and northeastern portion of the station, including the waterfront area of the NAVSTA Mayport turning basin, have been developed into an airstrip, parking lots, maintenance and administrative facilities, a golf course, and personal residences. This development leaves only a few scattered natural areas available for habitat and growth of terrestrial biological systems (Figure 3-4).

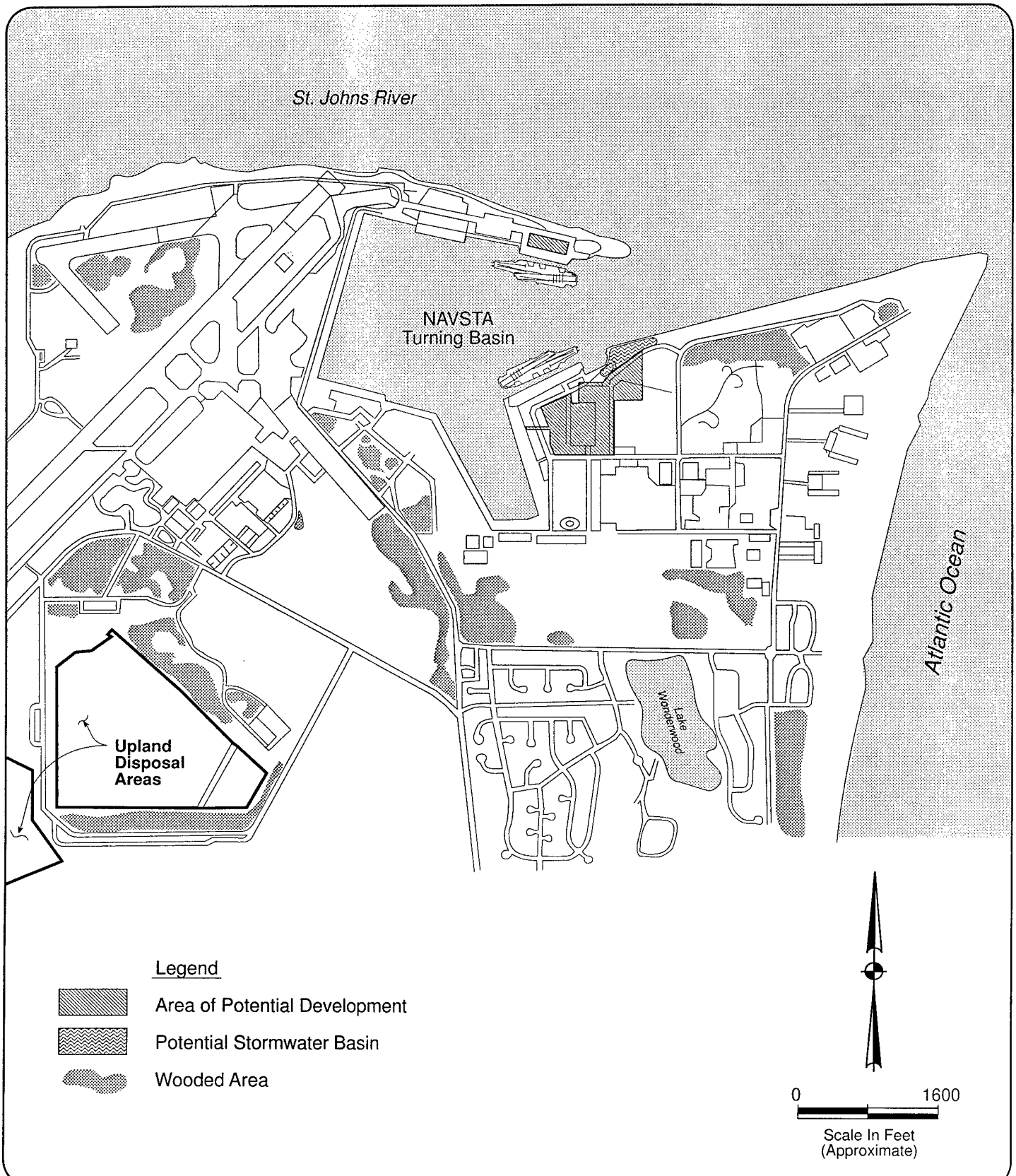


Figure 3-4. Wooded Areas (NAVSTA Mayport, 1993)

3.2.1.1 Terrestrial Vegetation

The terrestrial vegetation of eastern Duval County is characterized by the sandhill community and the pine flatwoods community, both of which are characteristic of NAVSTA Mayport. Pine flatwoods associations which dominate natural terrestrial vegetation on NAVSTA Mayport, occur in areas of fairly level topography. Pine flatwoods are characterized by an open canopy forest of widely-spaced pine trees with an extensive low shrub stratum and a variable layer of herbs and shrubs. The most common species associations of the pine flatwoods are longleaf pine (*Pinus palustris*) and slash pine (*Pinus elliottii*). Pond pine (*P. serotina*), fetterbush (*Lyonia lucida*), and saw palmetto (*Seronoa repens*) are also present. Common understory species include St. Johns wort (*Hypericum* spp.), dwarf huckleberry (*Gaylussacia dumosa*) and staggerbush (*Lyonia* spp.). The dominant understory species in the upland pine forest is wiregrass (*Aristida stricta*).

Sandhill community areas are typically located at higher elevations on old, well-drained sand dunes where xeric-adapted (dry) vegetation such as longleaf pine dominate. Sandhills are characterized by a forest of widely-spaced pine trees with a somewhat sparse understory of deciduous oaks and a fairly dense ground cover of grasses and herbs on rolling hills of sand. Particular dominant understory species of this habitat are xerophytic oaks, predominantly turkey oak (*Quercus laevis*), with bluejack oak (*Q. incana*) and sand post oak (*Q. margaretta*) sometimes present.

Remnants of the Holocene oak forest association may also be present within the LSJRB and at NAVSTA Mayport. This habitat, termed upland hardwood hammocks or xeric hammocks, is an advanced successional stage of the sandhill community. It has a diverse warm-temperate/piedmont community that may include black cherry (*Prunus serotina*), pignut hickory (*Carya glabra*), southern magnolia (*Magnolia grandiflora*), and a variety of oak trees (*Quercus spp.*), especially live oak (*Q. virginiana*). These hammocks are characterized by scrubby, dense, low canopy forests with little understory other than palmetto or a multi-storied forest of tall trees with an open or closed canopy. Xeric hammocks usually occur in isolated patches that rarely cover extensive areas (FNAI, 1990).

Major upland vegetation communities present at NAVSTA Mayport include 64 acres of slash pine-hardwood forest in the southern portion and 136 acres of planted slash pine in the eastern on-base housing area. Wooded areas near the waterfront are shown on Figure 3-4. In addition to native vegetation, stands of mature trees are present along roadways and among on-base housing, while 947 acres (over 28 percent) of the station consists of mowed road and runway shoulders, golf course, and lawns. Approximately 178 acres (5 percent) of the land at NAVSTA Mayport is maintained in a forestry program (U.S. Navy, 1995d).

3.2.1.2 Inland Wetlands Vegetation

The transition between upland and wetland plant communities is controlled by periodic inundation of the habitat by seasonal rainfall or flooding from rivers and streams; abrupt demarcation is absent. Floodplain zones at NAVSTA Mayport are presented in Figure 3-5. Inland wetland communities are defined by the ability of the vegetation to withstand periodic fresh to slightly brackish water inundation, depending on the conditions in the area. Wetland areas on NAVSTA Mayport are presented in Figure 3-6. Inland wetland habitats present in Duval County include wetland-hardwood forests of hardwood swamp and swamp hammock types, both of which are present at NAVSTA Mayport. These habitats are dominated by mesophytic oaks including willow oak (*Quercus phellos*), laurel oak (*Q. hemisphaerica*), and live oak (*Q. virginiana*). Typical vegetation found in these areas include pond cypress (*Taxodium ascendens*), bald cypress (*T. distichum*), red maple (*Acer rubrum*), sweetgum (*Liquidamber styraciflua*), river birch (*Betula nigra*), water hickory (*Carya aquatica*), tupelo (*Nyssa* spp.), and swamp chestnut oaks (*Q. michauxii*). Typical understory consists of poison ivy (*Toxicodendron radicans*), peppervine (*Ampelopsis*), indigo bush (*Indigofera suffruticosa*), white grass (*Leersia virginica*), plume sedge (*Erianthus* spp.), caric sedges (*Carex* spp.), redtop panicum (*Panicum rigidulum*), crossvine (*Anisostichus capreolata*), American wisteria (*Wisteria frutescens*), and wood grass (*Oplismenus setarius*) (SJRWMD, 1992 and FNAI, 1990).

In floodplain areas of wetland-hardwood forests diamond-leaf oak (*Q. laurifolia*) and water oak (*Q. nigra*) are not uncommon. Loblolly pine (*P. taeda*) is present in varying abundance in specific localities particularly along tributary streams and the St. Johns River where good quality, alluvial soil is found. Pond pine (*P. serotina*) and occasionally other pine species are also present in areas where flooding is shallow and of brief duration. Also present are habitats found in higher moisture conditions, with wetter, more organic soils than the hardwood hammock habitats. These are dominated by trees such as loblolly pine, sweetbay (*Magnolia virginiana*), redbay (*Persea borbonia*), and slash pine. Typical understory plants may include wax myrtle (*Myrica cerifera*), large gallberry (*Ilex myrtifolia*), swamp titi (*Cyrilla racemiflora*) and black titi (*Cliftonia monophylla*). Cypress and hydrophytic hardwoods may also be present. Eighty-five acres of sweetbay-water oak hardwood hammocks are found in the southern and western portions of NAVSTA (NAVSTA Mayport, 1993).

Lake Wonderwood, which is approximately 20 acres and is located southeast of the NAVSTA Mayport turning basin, is surrounded by wetland vegetation. Cattails (*Typha sp.*) are the predominant wetland plant (Figure 3-6). Lake Wonderwood is a manmade lake that is tidal and brackish. Cattails, a freshwater plant, have survived at Lake Wonderwood with the change to brackish waters. A large area of saltgrass (*Distichlis spicata*) is located west of the main entrance and south of the golf course.

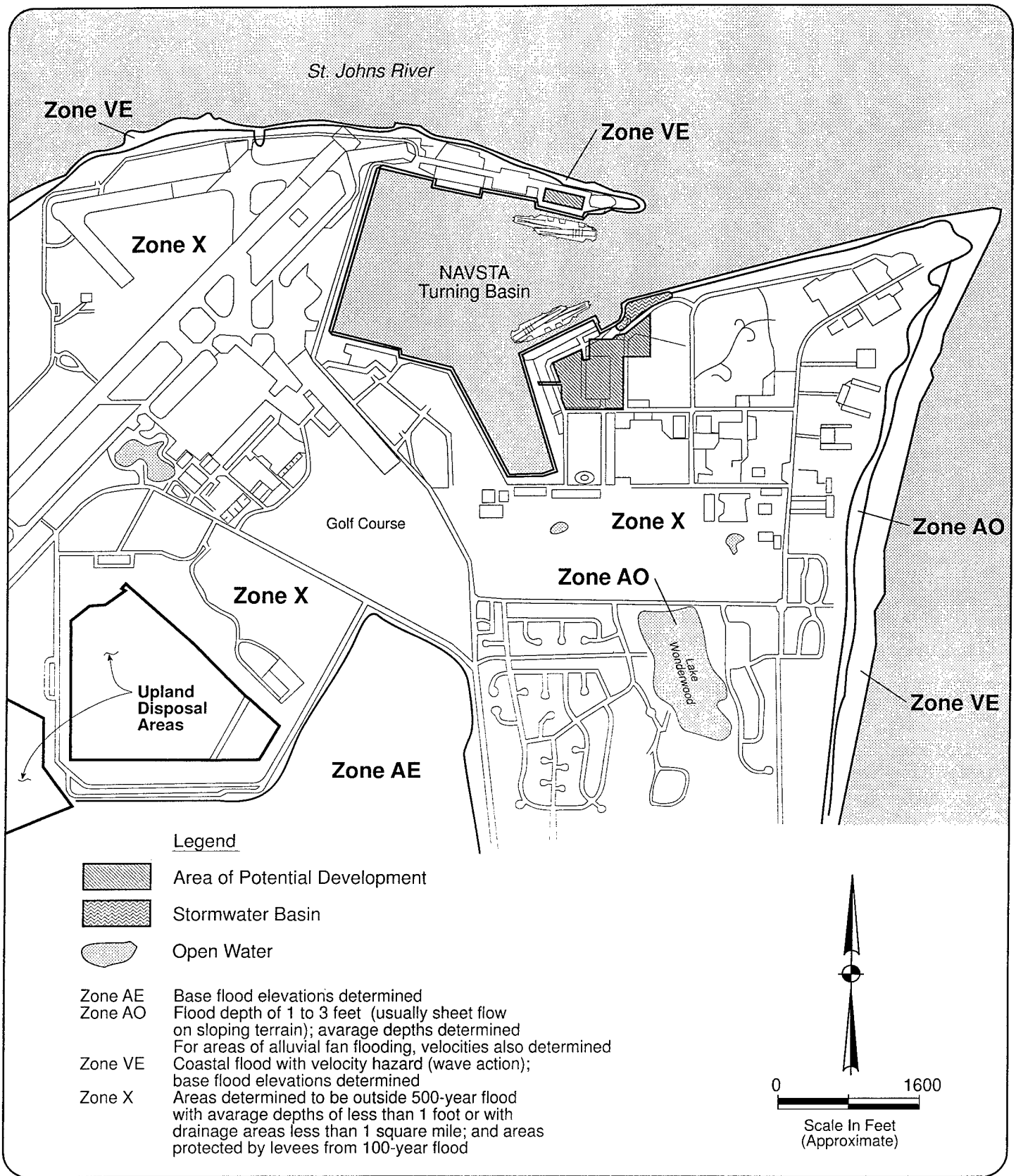


Figure 3-5. Flood Zones at NAVSTA Mayport (FEMA, 1992)

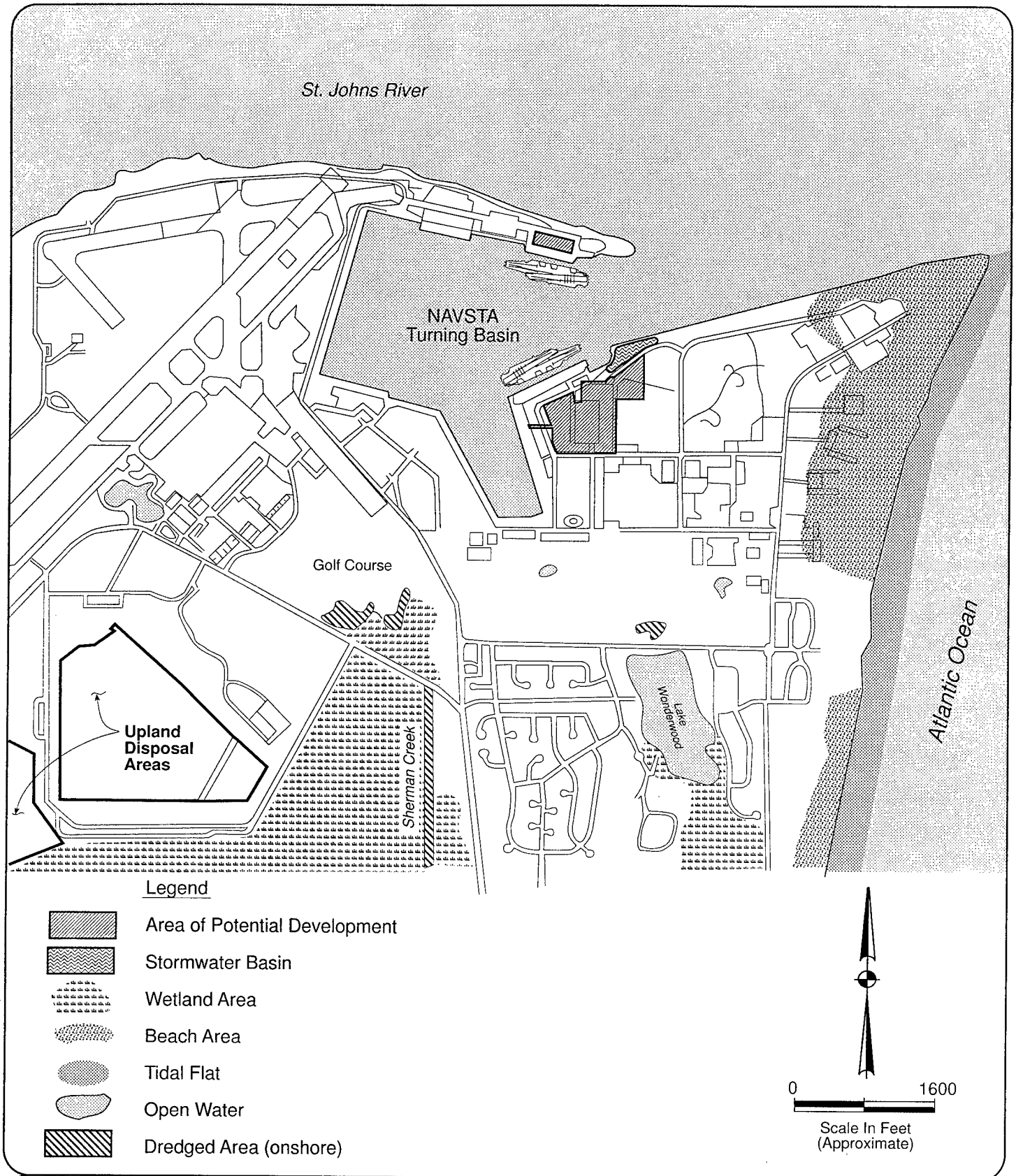


Figure 3-6. Beach and Wetlands at NAVSTA Mayport (USGS, 1992)

3.2.1.3 Birds

Avian densities are typically low throughout the year with an increase in winter due to the influx of migratory winter birds. Birds known to occur on the station include: wood stork (*Mycteria americana*), least tern (*Sterna antillarum*), brown pelican (*Pelecanus occidentalis*), roseate spoonbill (*Ajaia ajaja*), tricolored heron (*Egretta tricolor*), Worthington's marsh wren (*Cistothorus palustris griseus*), black-crowned night-heron (*Nycticorax nycticorax*), loggerhead shrike (*Lanius ludovicianus*), and bald eagle (*Haliaeetus leucocephalus*) (U.S. Navy, 1995e and NAVSTA Mayport, 1993). Birds which are also likely at NAVSTA Mayport include: great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), sandwich tern (*Sterna sandviensis*), black skimmer (*Rynchop niger*), great egret (*Casmeridius albus*), osprey (*Pandion haliaetus*), turkey vulture (*Cathartes aura*), purple gallinule (*Porphyrula martinica*), herring gull (*Larus argentatus*), mourning dove (*Zenaidas macroura*), northern flicker (*Colaptes auratus*), blue jay (*Cyanocitta cristata*), northern cardinal (*Cardinalis cardinalis*), and other songbirds (NAVSTA Mayport, 1993). The Florida great white heron (*Ardea herodias occidentalis*), little blue heron (*Egretta caerulea*) and the Florida burrowing owl may inhabit the station. At least two wading bird rookeries are known in the vicinity of NAVSTA Mayport: Little Talbot Island and Fort Caroline. Species known to use these rookeries include the great blue heron, great egret, cattle egret (*Bulbucus ibis*), and little blue heron (Florida Game and Fresh Water Fish Commission, 1994).

3.2.1.4 Terrestrial Mammals

NAVSTA Mayport has not conducted a comprehensive mammal survey. However, mammals likely present in the vicinity of the station include raccoon (*Procyon lotor*), opossum (*Didelphis marsupialis*), armadillo (*Dasypus novemcinctus*), gray fox (*Uroycon cineroargenteus*), eastern gray squirrel (*Sciurus carolinensis*), hispid cotton rat (*Sigmodon hispidus*), marsh rice rat (*Oryzomys palustri*), beach mice (*Peromyscus polionotus*), cotton mouse (*Peromyscus gossypinus*), house mice (*Mus muscolus*), black rat (*Rattus rattus*), eastern cotton tail rabbit (*Sylvilagus floridanus*), bobcat (*Lynx rufus*), and various shrews (Soricidae). According to a survey on bat fauna, the seminole bat (*Lasiurus seminolus*) is a common site inhabitant. Bat colonies, *Tadarida* and *Nycticeius*, may be located near the station and may forage in the area (FNAI, 1994).

3.2.1.5 Reptiles and Amphibians

Approximately 20 to 30 species of mammals, reptiles, and amphibians are known to occur in the vicinity of the station (Myers and Ewel, 1990). Species likely to be found include toads (Bufonidae), tree frogs (Hylidae), true frogs (Ranidae), alligator (*Alligator mississippiensis*), box turtle (*Terrapene carolina*), basking turtles (*Pseudemys* spp.), slider turtle (*Trachemys scripte*), gopher tortoise (*Gopherus polyphemus*), glass lizards (*Ophisaurus* spp.), gekkos (Gekkonidae), green anole (*Anolis carolinesis*), ground skink (*Scincella lateralis*), southern five-lined skink (*Eumeces inexpectatus*), six-lined racerunner (*Cnemidophorus sexlineatus*), black racer snake (*Coluber constrictor*), corn snake (*Elaphe*

guttata), rat snake (*Elaphe spp.*), water snake (*Nerodia* spp.), eastern diamondback rattlesnake (*Crotalus adamenter*), timber rattlesnake (*C. horridus*), cottonmouth (*Agkistrodon contortri*), and copperhead (*A. piscivorus*) (FNAI, 1990).

3.2.2 Aquatic Systems

The coastal habitat that surrounds NAVSTA Mayport on three sides involves sensitive biological aquatic communities with exceptional productivity that display diverse resources essential to both natural and economical needs of the area (Figure 1-2). The NAVSTA Mayport turning basin, located on the northeastern part of the station, is approximately 167 acres and contains aquatic life influenced by the existing industrial characteristics of the area. Previous dredging, boat activity and vessel operations, and limited basin circulation all affect the quality and diversity of aquatic organisms within the basin.

3.2.2.1 Coastal Wetlands

NAVSTA Mayport contains approximately 1,667 acres of brackish and intertidal salt marsh in the south and southwestern portion and 85 acres of sweetbay-water oak hardwood hammock in the southern and western portions of the station (SOUTHDIV, 1993). They include tidal waters and marshes, freshwater marshes, riverine/estuarine wetlands, and swamps. South of the St. Johns River and along the west boundary of NAVSTA Mayport, a major tidal marsh area extends southward along both sides of the AIWW.

Coastal wetland communities in Duval County predominantly involve intertidal salt marsh (SJRWMD, 1992). Dominant salt marsh flora include smooth cordgrass (*Spartina alterniflora*), marshhay cordgrass (*S. patens*), big cordgrass (*S. cynosuroides*), black needlerush (*Juncas roemerianus*), cabbage palm (*Sabal palmetto*), wax myrtle (*Myrica cerifera*), and marsh elder (*Iva frutescens*).

3.2.2.2 Sea and Submerged Grasses

Studies by the SJRWMD suggest that true seagrasses are probably not present in abundance in the more marine sections of the LSJRB; however, the presence of submerged macrophytes has not been investigated. Widgeon grass (*Ruppia maritima*), a species with reported tolerance to both fresh and salt water environments, has been reported within the St. Johns River. Site specific abundance and distribution have not been studied. Because wintertime temperatures are too low for turtle grass (*Thallasia testudinum*), summertime temperatures are too warm for eel grass (*Zostera marina*), and improper conditions exist for shoal grass (*Halodule* spp.), the LSJRB estuary probably has no true seagrasses at high levels of abundance (SJRWMD, 1994).

The "blackwater" effect caused by tree leaf litter dropped close to the shoreline, combined with the turbid nature of the area, tends to limit light penetration. This

produces a shallow euphotic zone, and probably restricts submerged aquatic plant growth to waters with maximum depths ranging from 5 to 6.5 feet (SJRWMD, 1994).

3.2.2.3 Plankton

Species diversity of phytoplankton (plants and algae), zooplankton (animal member of plankton), and ichthyoplankton (larval stages of zooplankton) in the St. Johns River is the greatest at the mouth of the river adjacent to NAVSTA Mayport. Major plankton density peaks are in June or July with secondary peaks occurring in December or January.

There are no phytoplankton, zooplankton, or ichthyoplankton sampling events that have been performed directly within the NAVSTA Mayport turning basin or entrance channel. The information presented in the following sections, from studies conducted in the area, is to be used as a general reference of plankton abundance and diversity that could potentially occur in the vicinity of the station.

Phytoplankton

The aquatic environment of the Atlantic Ocean, St. Johns River, and surrounding marsh areas in the vicinity of the station supports populations of phytoplankton. Species composition is dependent upon salinity tolerance and macro- and micro-nutrient availability. Water staining and turbidity affect the amount of light penetration, influencing the photosynthetic capability of phytoplankton. In the St. Johns River, siliceous diatom species, principally of the genera *Coscinodiscus* and *Melosira,* are the dominant phytoplankters. In addition, dense blue-green algal blooms, of generas *Anabaene, Raphidiopsis, Microcystis,* may occur in great abundance during summer months (SJRWMD, 1994). The diatom populations reach peak levels in February. Prevalent species of phytoplankton reported in the LSJRB include *Skeletonema costatum, Chaetoceros decipiens, Rhizosolenia alata, Nitzchia seriata, Melosira italica, Chaetoceros debile, Coscinodiscus lineatus, Thalassionema nitzschiodes, Thallassiotrix fraunfeldii,* and *Gyrosigma* spp. (SJRWMD, 1994).

Phytoplankton populations at the ODMDS site, located on the Georgia Bight, consist primarily of diatoms, dinoflagellates, and coccolithophorids. The phytoplankton of the continental shelf waters are dominated by diatoms, with dinoflagellates abundant during the summer months. Coastal and estuarine runoff intrusions, such as those of the lower St. Johns River, provide essential nutrients for phytoplankton growth, thereby resulting in greater abundances of phytoplankton within nearshore and shelf-edge waters (EPA, 1983).

Zooplankton

The Jacksonville Power Park Siting Study (Envirosphere, 1981) examined mesozooplankton (retained on a 202 micron mesh net) and macrozooplankton (retained on a 363 micron mesh net) for stations located along the main branch of the St. Johns

River and Browns Creek and San Carlos Creek tributaries, located approximately eight miles west of NAVSTA Mayport (Figure 2-7). Overall, mesozooplankton and macrozooplankton density and diversity is greatest in spring and summer within the mainstem and tidal creeks.

The most dominant species of mesozooplankton along the St. Johns River and tributaries throughout the year was determined to be the calanoid copepod (*Acartia tonsa*) which contributed approximately 95% of the total biomass (EPA, 1983). Dominant species along the mainstem of the St. Johns River and peak occurrences include *cirriped nauplii* (spring, summer), and the copepods *Paracalanus parvis* (spring, summer) and *Pseudodiaptaonus cornatus* (summer). In the mainstem, crab zooea dominate the macrozooplankton in summer, while mysid shrimp are most prevalent in spring and winter. Other important species include *Sagitta* sp. (Arroworm) and various fish eggs.

Ichthyoplankton are the larval stages of fish species. Shrimp larvae exhibit greatest abundance on the inner-shelf during spring where they comprise up to 16 percent of the total zooplankton mass present. During the summer and spring months, the most prominent commercial species include *Sciaenidae* (Sciaenids), *Penaeus* spp. (shrimp), *Cynocion nebulosos* (Spotted Sea Trout), and *Cynoscion regalis* (Weakfish). Forage species are dominated by *Anchoa* spp. (anchovy), while other species include *Gobiosoma* spp. (Gobiosoma), *Blenniidae* (Blenny), and *Microgobius* spp. (Microgobias). *Micropogonia undulatus* (Croaker) was a prominent winter species detected during this survey.

Zooplankton populations at the ODMDS site are composed of copepods, chaetognaths, urochordates, coelenterates, pteropods, decapods, and a variety of planktonic larvae. Calenoid copepods typically are the most abundant species. Zooplankton are most abundant in spring and autumn. In general, nearshore waters contain a higher standing stock and less diversity than offshore waters. Shrimp, crab, and fish larvae are abundant on the continental shelf and become fairly uncommon offshore (EPA, 1983).

3.2.2.4 Benthos

Biological assessments conducted during 1973 through 1974 and 1979 through 1980 in the vicinity of the Jacksonville Electric Authority Northside Power Generating Station, provide benthic data for the St. Johns River in the area of Blount Island, Brown's Creek, San Carlos Creek, and Dunns Creek (Rehm et al., 1975 and Envirosphere, 1981) (Figure 2-7). Benthic communities in the vicinity of the LSJRB are characteristic of silty sand bottom material. The benthic community is highly diverse in species, but low in abundance and biomass. Fluid mud and sand bottoms, coupled with low salinities during peak runoff periods, may account for the low abundance and lack of benthic diversity. In general, more organisms were present during winter and spring sampling events with the numbers of organisms increasing at upstream stations in the mainstem of the river.

In the mainstem, the mollusc *Mulinia lateralis* was identified as the dominant species during winter, spring, and summer. Prevalent species in the mainstem included the Polychaete *Polycirrus* spp. (winter), the echinoderm *Ophiuroidea* spp. (winter, summer), and the polychaetes *Pectinaria gouldii* (winter), *Polychaete* spp. (summer), and *Nereis succinus* (summer). Benthic organisms were nearly absent in the mainstem during fall.

In 1973, the U.S. Naval Oceanographic Office conducted a characterization study at the ODMDS. A diverse macroinfaunal community was defined and no long-term impact from previous dredged material disposal was determined. The macroinfaunal community was found to be low in abundance and biomass. The majority of macroinfauna are small-bodied polychaetes and crustaceans typical of unstable sandy environments (EPA, 1983).

3.2.2.5 Shellfish

Two species of clams (*Mercenaria mercenaria* and *M. campechiensis*) are present in the shallow waters of Duval County. Hybrids between the two species are also likely to occur. Oysters (*Crassostrea virginica*) are found in clumps in intertidal areas and along the margins of marshes. Significant oyster and clam populations are found north of NAVSTA Mayport near the Fort George Inlet, Ft. George River, Simpson Creek, and Sisters Creek (Exhibit 2-7). The area immediately north of the St. Johns River in the project vicinity is unclassified by the Florida Department of Environmental Protection with respect to oyster and clam harvesting. This indicates that a comprehensive shellfish harvesting area survey has not been conducted in this area. Therefore, the area is unapproved for commercial shellfish harvest (Adamus et al., 1987). Mussels (*Mytilus* spp.) are also found in the same habitat (SJRWMD, 1992).

There are three abundant shrimp species in the lower St. Johns River Basin: *Penaeus fluviatilis* (white shrimp), *P. aztecus* (brown shrimp), and *P. duorarum* (pink shrimp). Shrimp species also found in the river include *Tracgtoebeys cibstructus* and *Xiphopeneus kroveri*, and two rock shrimp species, *Sicyonia brevirostris* and *S. dorsalis*. Grass shrimp *Paleomonetes* spp. are also found in the marshes. All three species of Penaeid shrimp spawn offshore and use the estuary as a nursery ground, ascending up the St. Johns River to water of suitable temperatures and salinities. Year-to-year variation in rainfall abundance may control the extent of the upstream migration of these species resulting from salinity variations (SJRWMD, 1992). Brown shrimp spawning peaks in late winter and maximum juvenile recruitment to the estuary occurs in late February and March. White shrimp spawn later with inshore recruitment peaking in May and June. Pink shrimp apparently spawn year-round with a peak in early spring. *Trachypenaeus constrictus* (banded shrimp) are present within the St. Johns River during the spring months.

3.2.2.6 Fish

Fish habitats are present on and adjacent to NAVSTA Mayport, including the Atlantic Ocean, St. Johns River, Lake Wonderwood, NAVSTA Mayport turning basin, Sherman Creek, Pablo Creek, and Chicopit Bay (Figure 2-7). Water conditions included in these areas range from saline ocean water to brackish lake and estuaries. Fish habitats include beach shoreline, rock jetties, saltmarsh creeks, and the open water lake with vegetated littoral zone. Approximately 170 species of fish have been identified for the entire St. Johns River (SJRWMD, 1994).

Major offshore fish communities of the Georgia-Northeast Florida shelf are described in Ekberg and Huntsman (1985) and are summarized below. Nearshore estuarine (surf zone near continental shelf to 25 m) habitats are dominated by Sciaenids (flatfishes) while sandy plain benthic habitats (25-100 m) are commonly inhabited by sea robins (*Priono tribulus*) and lizardfish (*Synodus foetens*). Oceanic pelagic fish (gulf stream and outer shelf water column) include *Makaira nigricans* (blue marlin), *Tetrapturus albidus* (white marlin), *Tetrapoturus* spp. (spearfishes), *Isthiohorus platypterus* (Atlantic sailfish), and *Thunnus* spp. (tuna). Coastal pelagic fish (nearshore to midshelf environments) include *Scomberamorus* spp. (mackerels), *Pomatomus saltatrix* (bluefish), *Sarda sarda* (Atlantic bonito), *Euthynnus alletteratus* (little tuna), and *Brevoortia* spp. (menhaden). Reef fishes (hard bottom and sponge-coral areas mid and outer shelf) are a large and diverse group of over 300 species, including *Lutjanus* and *Rhomboplites* (snappers), *Epinephelus* and *Mycteroperca* (groupers), *Pagrus* and *Calamus* (porgies), and *Haemulon* (grunts). Coastal pelagic species have a strong relationship with nearshore and wetland communities. Adults and juveniles feed and use the St. Johns River estuary as a nursery area. Most reef fishes and ocean pelagic fish have only an indirect relationship with estuaries through food chain interactions.

The Florida Game and Freshwater Fish Commission sampled Lake Wonderwood in 1992. Fish sampled included Atlantic croaker (*Micropogon undulatus*), black mullet, sheepshead (*Archosargus probatocephalus*), redear sunfish (*Lepomis microlophus*), and mosquito fish (*Gambusia affinis*). Lake Wonderwood was a manmade freshwater lake; however, presently the lake is affected by high tides and is brackish. A stocking program has introduced largemouth bass (*Micropterus salmoides*), bluegill sunfish (*Lepomis macrochirus*), and redear sunfish (*Lepomis* spp.), to the lake (NAVSTA Mayport, 1993).

The coastal habitat of the ODMDS ranges over a generally smooth, sand to sandy-silt bottom with a depth of 16 to 20 meters. The fish are primarily of the drum family, including croakers, spot kingfish (*Scomberomorus caralla*), silver perch (*Bairdiella chrysura*), sea trouts (*Cynoscion nebulosus*), red drum (*Sciaenops ocellata*), and black drum (*Pogonias cromis*) (EPA, 1983).

3.2.2.7 Sport and Commercial Fishing

Clams (*Mercenaria* spp.) are harvested primarily for recreational use. No study of distribution of these species is reported for the LSJRB. A few mussels (*Mytilus* spp.) may be harvested for private consumption. Landing data is unavailable for these species. Commercial oysters (*Crassostrea virginica)* are harvested on public oyster beds and private leases in the northern part of Duval County in the vicinity of Ft. George Inlet and Ft. George River.

Blue crabs (*Callinectes sapidus*) represent an important aspect of the fishery in the LSJRB. Although larger crabs are reported in less salty waters, studies have shown that the most growth per molt occurs in salt water. Most blue crabs reach harvestable size within one year after hatching (SJRWMD, 1992). An unquantified amount of blue crabs are harvested in the recreational blue crab fishery. Variations in blue crab harvest do not presently suggest that this fishery is declining (St. Johns River Water Management District, 1992).

The commercial shrimp fishery in the LSJRB is based upon three species: *Penaeus fluviatilis* (white shrimp), *P. aztecus* (brown shrimp), and *P. duorarum* (pink shrimp). These species spawn offshore where their eggs and larvae develop before moving inshore. Year-to-year variations in rainfall control the extent of upstream migration of these species (SJRWMD, 1994). The bulk of the shrimp harvest takes place in the Atlantic Ocean during the eight-month period June through February. Shrimping activities along the river reflect "bait" shrimping activities that provide live shrimp for gamefish bait. A large portion of this harvest is reportedly used for human consumption.

Commercial fisheries in the Georgia Bight contribute about six percent of the total U.S. catch, in terms of weight and value. On an annual basis, the Florida east coast fisheries comprise 30 percent of the value and 22 percent of the weight of the total fishery within the Georgia Bight. The Atlantic menhaden (*Brevoortia tyrannus*) and yellow fish (*B. smittii*) fisheries dominate the total commercial catch of the Florida east coast. However, the dollar value of these catches ranks only fifteenth since menhaden are not utilized for human consumption. The fishery is mainly confined to the mid-Shelf region of the Georgia Bight, although young menhaden use estuaries as nursery grounds. King (*Scomberomorus caralla*) and Spanish mackeral (*S. maculatus*) also are important components of the commercial fishery along the Jacksonville, Florida shoreline.

3.2.2.8 Marine Mammals

Marine mammals known to occur in waters adjacent to NAVSTA Mayport include the West Indian manatee (*Trichehus manatus*), Atlantic bottlenose dolphin (*Tursiops truncatus*), and northern right whale (*Balaena glacialis*) (Figure 3-7) (NAVSTA Mayport, 1993). Both manatees and right whales are listed as endangered species by state and

federal listings, and are discussed in the next section under threatened and endangered species (Section 3.2.2.9). Section 202 of the Marine Mammal Protection Act directs the Marine Mammal Commission to make recommendations to the Department of Commerce, the Department of the Interior, and other agencies on actions to protect marine mammals. To help meet this particular charge, the Marine Mammal Commission devotes special attention to particular vulnerable species or populations. Both the West Indian manatee and the northern right whale are species of special concern and are listed as endangered under the U.S. Endangered Species Act. The bottlenose dolphin is among several U.S. species of animals not listed as endangered, but which nonetheless present challenging management needs due to rapidly declining populations (Marine Mammal Commission, 1994).

The bottlenose dolphin occurs throughout the world in temperate and tropical waters, both inshore and offshore. It is the most common cetacean species in the coastal waters of the Southeastern United States. Bottlenose dolphin behavior is very flexible and they are generally active day and night. Dolphins have a minimum home range of 95 shoreline miles that varies seasonally. The bottlenose dolphin is declining in population. The primary cause for the declining population was an outbreak of morbilli virus that took place on the western Atlantic coast, including the area in the vicinity of NAVSTA Mayport. This virus was previously known to cause phocene distemper in harbor seals. This infection left infected dolphins susceptible to a number of bacterial and viral pathogens. The combined effects of this disease may have been responsible for a 60 percent reduction in the mid-Atlantic migratory population of Atlantic bottlenose dolphins (Marine Mammal Commission, 1994).

3.2.2.9 Threatened and Endangered Species

Federal and state listed, threatened, endangered, and candidate species of special concern that occur or potentially occur in the vicinity of NAVSTA Mayport are listed in Table 3-1. Confirmed species at NAVSTA Mayport include the American alligator, loggerhead turtle, wood stork, bald eagle, eastern brown pelican, least tern, West Indian manatee, and northern right whale. There are no confirmed sitings of threatened/endangered plant species at NAVSTA Mayport.

American alligators (*Alligator mississippiensis*) are a threatened species due to the similarity to the American crocodile (*Crocodylus acutus*) which is a state and federally listed endangered species. American alligators inhabit river systems, canals, lakes, swamps, bayous, and coastal marshes where they feed on mammals, amphibians, birds, reptiles, fish, and crustaceans of suitable size. They are known to inhabit Lake Wonderwood, the tidal marsh, and the intracoastal waterway in the vicinity of the station.

Optimum habitat requirements for the Loggerhead turtle (*Caretta caretta*) have never been determined, yet they are found in diverse habitats ranging from a pelagic existence in oceanic waters to rock reefs and estuaries. Nesting habits are well known, and require a sand beach, high enough that nests will not be inundated by high tide

TABLE 3-1 FEDERAL AND STATE LISTED THREATENED, ENDANGERED, AND CANDIDATE SPECIES THAT OCCUR OR POTENTIALLY OCCUR ON NAVSTA MAYPORT, FLORIDA

SPECIES		STATUS		OCCURRENCE ON NAVAL STATION
COMMON NAME	SCIENTIFIC NAME	STATE	FEDERAL	
REPTILES & AMPHIBIANS				
American alligator	*Alligator mississippiensis*	SC	T (S/A)	CR
Eastern indigo snake	*Drymarchon corais couperi*	T	T	LR
Florida pine snake	*Pituophis melanoleuces mugitus*	SC	N/A	PR
Gopher tortoise	*Gopherus polyphemus*	SC	N/A	PR
Green sea turtle	*Chelonia mydas*	E	E	LV
Hawksbill turtle	*Eretmochelys imbricata*	E	E	LV
Leatherback sea turtle	*Dermochelys coriacea coriacea*	E	E	PM
Loggerhead sea turtle	*Caretta caretta*	T	T	CR
Ridley sea turtle	*Lepidochelys kempi*	E	E	UM
BIRDS				
Bald eagle	*Haliaeetus leucocephalus*	T	T	LV
Eastern brown pelican	*Pelecanus occidentalis*	SC	N/A	CR
Florida borrowing owl	*Speotyto cuniularia floridana*	SC	N/A	PR
Kirtland's warbler	*Dendroica kirtlandii*	E	E	PM
Least tern	*Sterna antillarum*	T	N/A	CR
Piping plover	*Charadrius melodus*	T	T	LV
Red-cockaded woodpecker	*Picoides borealis*	T	E	PR
Southeastern American kestrel	*Falco sparverius paulus*	T	N/A	LR/PM

TABLE 3-1 (*Contd*)

SPECIES		STATUS		OCCURRENCE ON NAVAL STATION
COMMON NAME	SCIENTIFIC NAME	STATE	FEDERAL	
Wood stork	*Mycteria americana*	E	E	PR/CV
Worthington's marsh wren	*Cistohorus palustris griseus*	SC	N/A	PR
Little blue heron	*Egretta caerulea*	SC	N/A	PR
Tricolored heron	*Egretta tricolor*	SC	N/A	PR
Osprey	*Pardion haliaetus*	SC	N/A	PR
Snowy egret	*Egretta thula*	SC	N/A	PR
MAMMALS Northern right whale	*Eubalaena glacialis*	E	E	CM
West Indian manatee	*Trichechus manatus*	E	E	CM
Bottlenose dolphin	*Tursiops truncatus*	N/A	SC	PR
FISH Shortnose sturgeon	*Acipenser brevirostrum*	E	E	PR
Atlantic sturgeon	*Acipenser oxyrhychus*	SC	T	PR
PLANTS Apalachicola milkweed	*Asclepias viridula*	T	Candidate	PR
Beard grass	*Gymnopogon chapmanianus*	R	N/A	PR
Catesby lily	*Lilium catesbaei*	T	N/A	PR
Chaffseed	*Schwalbea americana*	E	Candidate	PR
Crownbeard	*Verbesina heterophylla*	R	Candidate	PR
Curtiss' reedgrass	*Calamovilfa curtissii*	E	N/A	PR

TABLE 3-1 (*Contd*)

SPECIES		STATUS		OCCURRENCE ON NAVAL STATION
COMMON NAME	SCIENTIFIC NAME	STATE	FEDERAL	
Florida milkweed	*Matelea floridana*	E	N/A	PR
Green ladies' tresses	*Spiranthes polyantha*	E	N/A	PR
Greenbrier	*Smilax smallii*	R	N/A	PR
Incised groove bur	*Agrimonia incisa*	T	N/A	PR
Lakeside sunflower	*Helianthus carnosus*	E	N/A	PR
Meadow spikemoss	*Selaginella apoda*	T	N/A	PR
Pavonia sp.	*Pavonia spinifex*	R	N/A	PR
Peltandra sp.	*Peltandra sagittaefolia*	R	N/A	PR
Pepper	*Peperomia humilis*	E	N/A	PR
Physostegia sp.	*Physostegia leptophylla*	R	N/A	PR
Pycnanthemum sp.	*Pycnanthemum floridanum*	R	N/A	PR
Rhynchosia sp.	*Rhynchosia cinerea*	R	N/A	PR
Southern lip fern	*Cheilanthes microphylla*	E	N/A	PR
Sphenostigma sp.	*Sphenostigma coelestinum*	E	N/A	PR
Spikemoss	*Selaginella ludoviciana*	T	N/A	PR
Three-awn grass	*Aristida rhizomophora*	R	N/A	PR
Toothache grass	*Ctenium floridanum*	R	N/A	PR
INVERTEBRATES				
Atlantic Geoduck	*Panopea bituncata*	R	N/A	PR

TABLE 3-1 (*Contd*)

SPECIES		STATUS		OCCURRENCE ON NAVAL STATION
COMMON NAME	SCIENTIFIC NAME	STATE	FEDERAL	
Scarab Beetle	*Ataenius rudellus*	R	N/A	PR

Source:

Florida Department of Environmental Protection (FDEP), 1994
Florida Natural Areas Inventory (FNAI), 1994b
U.S. Fish and Wildlife Service (USFWS), 1994
U.S. Fish and Wildlife Service, (USFWS),1996
Florida Game and Freshwater Fish Commission (FG & FFC), 1994b
Rare and Endangered Biota of Florida - Invertebrates, 1982

Status

E = Endangered
T = Threatened
T (S/A) = Threatened due to Similarity of Appearance
R = Rare
SC = Species of Concern, State
Candidate = Candidate species for Federal Listing

Occurrence on NAVSTA Mayport

CR = Confirmed Resident
LR = Likely Resident
PR = Possible Resident
UR = Unlikely Resident
LV = Likely Visitor
CV = Confirmed Visitor

CM = Confirmed Migrant or Occasional Visitor
LM = Likely Migrant or Occasional Visitor
PM = Possible Migrant or Occasional Visitor
UM = Unlikely Migrant or Occasional Visitor

or soaked by groundwater rising from below. Loggerheads have been confirmed at nesting locations both on the NAVSTA Mayport beach and on beaches north and south of the installation (NAVSTA Mayport, 1993). The nesting season for loggerhead turtles is from May through October. Inshore and nearshore habitat in the region is also used by leatherback (*Dermochelys coriacea coriacea*), Kemp's Ridley (*Lepidochelys kempi*), and green (*Chelonia mydas*) sea turtles.

Wood storks (*Mycteria americana*) use freshwater and brackish wetlands where they feed on small fish, aquatic invertebrates, and frogs. Nests are usually constructed in large trees, and breeding occurs from February through April. Wood storks have been observed at NAVSTA Mayport on the canals on the east side of Main Street just south of the main gate, throughout the salt marsh along the many tidal creeks, on the dredged material disposal sites, and in the ponds at the west end of the golf course (FNAI, 1994). Wood storks feed in the marshes at NAVSTA Mayport and may roost on hardwood hammocks near the AIWW.

Eastern brown pelicans (*Pelecanus occidentalis*), a species of special concern, have been sighted at NAVSTA Mayport several times, according to a biological inventory conducted by FNAI in 1994. Eastern brown pelicans, in Florida routinely nest in trees above the high tide line. The pelicans roost and loaf on sand spits and offshore sand bars near the proposed project. Also, they feed in the shallow estuary waters.

Least terns (*Sterna antillarum*) nest on clear beaches of the mainland, above the reach of ordinary tides, eating small fish and crustaceans from nearby waters. The limiting factors, that have caused the least tern to become threatened/endangered, are lack of nesting habitat due to beach development and increased recreational use. Nesting of a least tern colony near the airfield runways was confirmed in 1984, and the colony was moved. A recent survey conducted during April, 1994 documented least terns congregating at the active dredged material disposal site, located south of the airstrip. Surveys conducted the following month documented approximately 125 birds nesting at the northeast end of the active spoil site. During June, 1994, a decline in least tern activity was noted. Only 25 individuals were observed on nests and no young were observed. Least terns have also been found nesting on rooftops with white crushed rock or peagravel substrate. A survey in June 1994 identified 42 buildings at NAVSTA Mayport as potential nesting areas for least terns. Nineteen least terns were observed on and over the buildings (FNAI, 1994).

Bald eagles (*Haliaeetus leucocephalus*) were confirmed foraging in the marsh area of NAVSTA Mayport. The eagles are very infrequent at the site. They are most likely present in the wintertime (Florida Natural Areas Inventory, 1995).

West Indian manatees (*Trichechus manatus*) inhabit sluggish rivers, sheltered marine bays, and shallow estuaries with access channels of minimum two meters depth. The concentration of manatees in the Southeastern United States is greatest in Florida and Georgia. Fresh water is a habitat requirement. Manatees are commonly found along the St. Johns River near the station and often enter the NAVSTA Mayport turning

basin. Based on a count of manatees made during a statewide aerial survey in 1992, the number of manatees in Florida is approximately 1,856 animals (Marine Mammal Commission, 1994). Harbor operations employees at NAVSTA Mayport see manatees in the turning basin about once every month during the warmer months (May through September). Manatees are primarily vegetarians feeding on submerged and emergent plants in coastal marine, estuarine, or freshwater habitats. Duval County is listed by FNAI as a manatee aggregation site. Several aggregation sites have been noted on St. Johns River in Duval County: J.D. Kennedy Generating Plant, Northside Generating Plant, and the Southside Generating Plant (Figure 3-7). Winter air temperatures of 50°F to 59°F and water temperatures below 68°F stimulate the formation of manatees aggregation sites at warm water springs, power plants, and industrial outfalls, such as those listed above (Florida Manatee Recovery Plan, 1989). Arrival at major aggregation sites usually begins in mid-November and ends in early March, but exact dates vary greatly with location of the refuge and weather patterns. The aggregation sites located on St. Johns River are in the upper reaches of the river; however, manatees travel through the proposed NAVSTA Mayport vicinity during their migration. Persistent threats to manatees include habitat destruction, power boat propellers, and direct vessel impacts.

Right whales (*Eubalaena glacialis*) migrate seasonally during the winter to their only known calving grounds along the southeastern United States coastline of the Atlantic Ocean, consisting of the shallow waters from Savannah, Georgia south to Cape Canaveral, Florida (Marine Mammal Commission, 1994) (Figure 3-7). The seasonality of right whale use of the region show clear peaks in relative abundance in January and February. Right whales may arrive as early as November and may stay into late March (Kraus et al., 1993). Figure 3-7 shows some of the sightings (closest to NAVSTA Mayport) of right whales in 1988 and 1989. There were a total of 79 right whales spotted in the coastal area from Kings Bay, Georgia to Cape Canaveral, Florida (Kraus, S.D. and R.D. Kenney, 1991). This area is a critical habitat for right whales. These migrant populations consist almost entirely of pregnant females and juveniles. Recent research has shown the primary mother/calf wintering area to be between Cumberland Island, Georgia and Jacksonville Beach, Florida to a distance of 15 miles off the coast. Approximately 75 percent of the population of right whales live their first few months of life off the east coast of Florida. A combination of limiting factors affect the right whale population including disturbances from vessels, collisions with ships, entrapment and entanglement in fishing gear, and habitat degradation. Known vessel-related deaths were found to represent approximately two percent of the whales know to occur in the area. Northern right whales are listed by the Convention on International Trade in Endangered Species of Wild Fauna and Flora, designated as endangered under the U.S. Endangered Species Act, and are considered depleted under the U.S. Marine Mammal Protection Act. Right whales are "the most endangered mammal in the United States," wherein loss of a single animal is recognized as a significant loss (Marine Mammal Commission, 1993). The species population may number fewer than 400 animals.

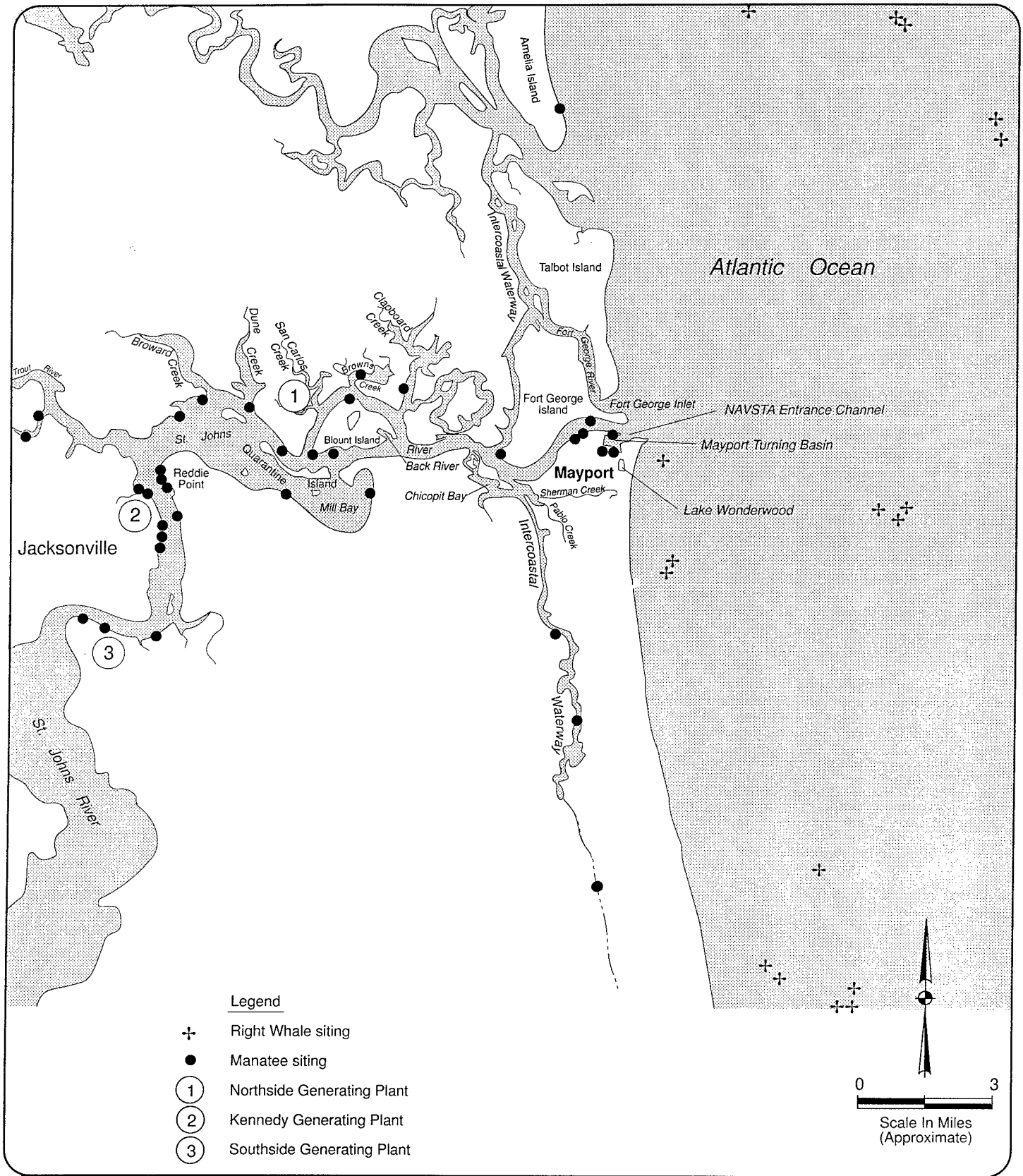


Figure 3-7. Manatee and Right Whale Sightings
(FDEP, 1994; MMC, 1988; and URI, 1991)

3.3 SOCIOECONOMIC RESOURCES

3.3.1 Region of Influence

3.3.1.1 Jacksonville Metropolitan Statistical Area

Naval Station (NAVSTA) Mayport is located in the Jacksonville Metropolitan Statistical Area (MSA), which includes Duval, St. Johns, Nassau, and Clay Counties. The Jacksonville MSA is the fifth largest MSA in Florida, with an estimated 1994 population of 970,500. Between 1980 and 1990, population in the MSA increased 25.54 percent from 722,252 in 1980 to 906,727 in 1990. As shown in Table 3-2, the MSA's population is projected to increase to 1,069,400 (10.2 percent) by the year 2000 and to 1,216,700 (13.8 percent) by the year 2010.

Duval County, because of its size and dominance in the region in terms of population and economic activity, is the project region for most of the following analysis. The City of Jacksonville has municipal jurisdiction in all of Duval County except for three cities along the coast, Jacksonville Beach, Atlantic Beach, and Neptune Beach (the Beaches); and one inland city, Baldwin, which is located in the rural western part of the county. The City of Jacksonville contains the central business district of the region and is the fifteenth largest city in the United States (BEBR, 1993).

3.3.1.2 Government and Regulatory Agencies

In 1968, the Duval County and Jacksonville governments combined to form a consolidated city-county government. Jacksonville is governed by an elected mayor and a nineteen-member city council that serves in four-year terms. The cities of Jacksonville Beach and Neptune Beach are governed by a six-member city council and a mayor; Atlantic Beach is governed by a mayor and four commissioners. A single commissioner represents the Beaches on the Jacksonville City Council.

The major state agency in Florida dedicated to environmental regulation is the Florida Department of Environmental Protection (FDEP). In 1993, the FDEP was formed from the consolidation of the Florida Department of Natural Resources and the Florida Department of Environmental Regulation. The main programs of the FDEP are waste management, water management, water facilities, and air resources management. NAVSTA Mayport is located in the Northeast District of the FDEP, headquartered in Jacksonville.

The Florida Department of Community Affairs (DCA) is the primary land-planning agency for the state. A major bureau within the DCA is the Division of Resource Planning and Management, which reviews local comprehensive plans, plan amendments, developments of regional impact (DRI), and activities within areas of critical state concern. The Division of Housing and Community Development and the Division of Emergency Management are also part of the DCA.

TABLE 3-2 POPULATION CHANGE, JACKSONVILLE MSA, 1980, 1990, 1994, 2000, and 2010

Location	1980	1990	1994	2000	2010	Change 1980–1990	Change 1990–2000	Change 2000–2010
Duval County	571,003	672,971	710,592	766,200	848,600	17.86%	13.85%	10.75%
Clay County	67,052	105,986	117,779	138,400	169,300	58.07%	30.58%	22.33%
Nassau County	32,894	43,941	47,371	52,800	60,800	33.58%	20.16%	15.15%
St. Johns County	51,303	83,829	94,758	112,000	138,000	63.40%	33.61%	23.21%
Jacksonville MSA Total	722,252	906,727	970,500	1,069,400	1,216,700	25.54%	17.94%	13.77%

Sources: BEBR 1991.
BEBR 1993.

The Northeast Florida Regional Planning Council (NFRPC) is located in the City of Jacksonville. Regional planning councils (RPC) in Florida are designated as the primary organizations to address problems and plan solutions that are regional in scope. The RPCs engage in area-wide comprehensive and functional planning, administer federal and state grants-in-aid, and provide a regional focus to land-use issues. The other major regional governmental entities in Florida are the water management districts. NAVSTA Mayport is located within the St. Johns River Water Management District, which is headquartered in Palatka, Florida.

3.3.1.3 Other Military Installations in the Region

The United States Navy has four major bases including NAVSTA Mayport in the northeast Florida region. Combined, these bases employ more than 49,000 military and civilian personnel and have an annual payroll of $1.1 billion. The other major installations in the region are Naval Air Station (NAS) Cecil Field, NAS Jacksonville, and Naval Submarine Base (NSB) Kings Bay in southeast Georgia. A fifth naval facility is the Fleet and Industrial Supply Center (FISC) Jacksonville Fuel Depot (Figure 3-8).

NAS Cecil Field is located approximately 37 miles southwest of NAVSTA Mayport. NAS Cecil Field is geographically the largest military base in the Jacksonville area, with a land area of nearly 23,000 acres. In 1993, NAS Cecil Field employed 7,750 military personnel and 1,524 civilian personnel, with a payroll of approximately $239 million. NAS Cecil Field was recommended for closure by the Defense Base Closure and Realignment Commission (U.S. Government Printing Office, 1993). Aircraft are scheduled to begin leaving NAS Cecil Field in November 1995, with the base closure date scheduled for September 1998.

NAS Jacksonville, located 26 miles southwest of NAVSTA Mayport along the west bank of the St. Johns River, consists of approximately 3,816 acres and is homeport for long-range antisubmarine search and strike aircraft, SH-3 antisubmarine warfare helicopters, and H-60 helicopters. NAS Jacksonville is also host to the Naval Medical Command Southeast Region, the FISC, and the Naval Aviation Depot. NAS Jacksonville employed approximately 8,491 military personnel and 6,791 civilian personnel in 1993. The 1993 combined military and civilian payroll was in excess of $424 million.

NSB Kings Bay is located on 16,000 acres in Kingsland, Georgia, approximately 33 miles north of NAVSTA Mayport. NSB Kings Bay is home to six Trident submarines, with 5,476 military personnel and 4,140 civilian personnel employed in 1993. The combined military and civilian payroll was approximately $189 million.

The FISC Jacksonville Fuel Depot is located 12 miles west of NAVSTA Mayport on 181 acres on the north bank of the St. Johns River. FISC Jacksonville Fuel Depot is an off-site activity under the authority of FISC Jacksonville, a tenant command aboard NAS Jacksonville. Additional military installations in Duval County include the Armed Forces Reserve Center hosted by NAS Jacksonville, the U.S. Coast Guard Station

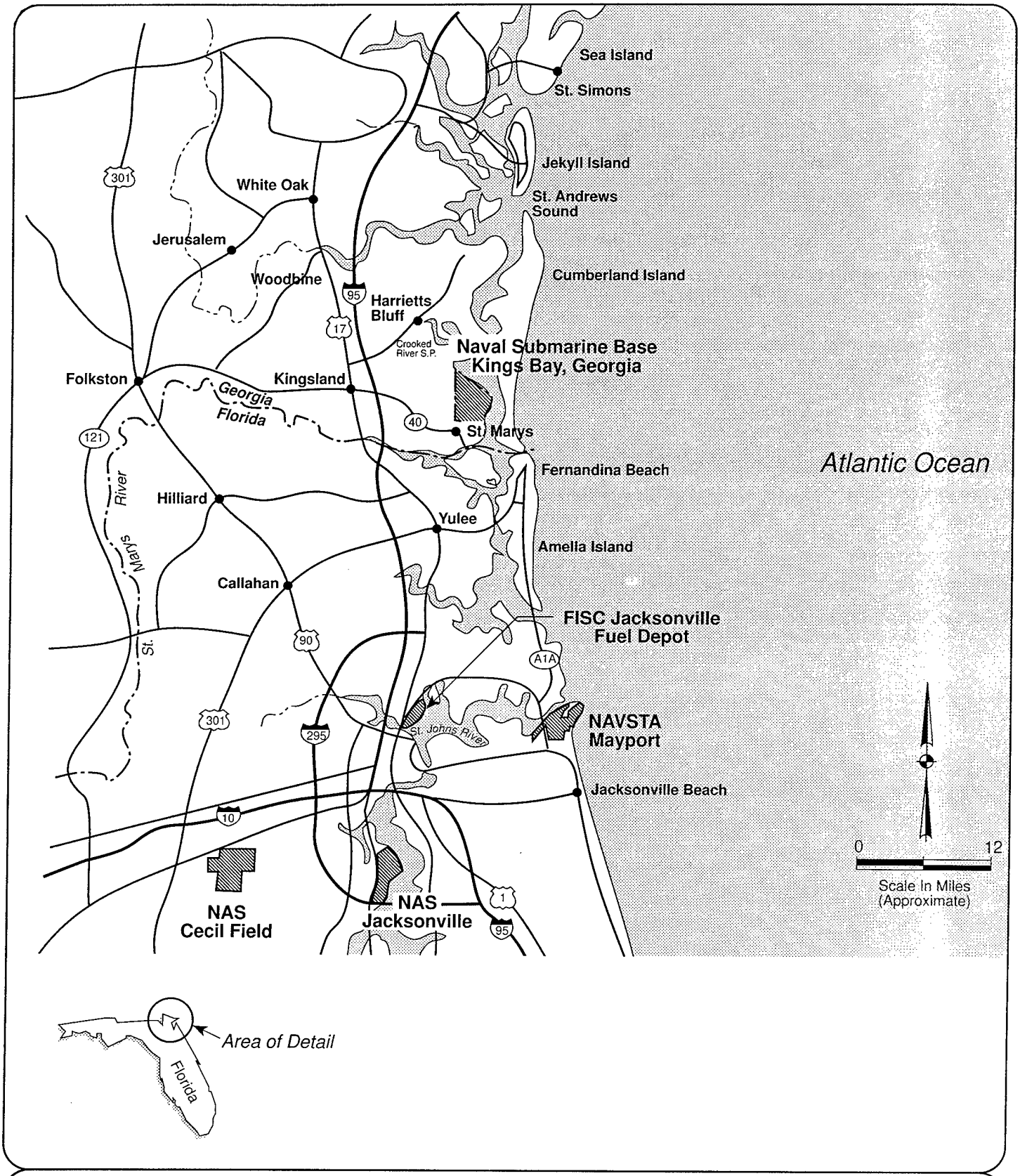


Figure 3-8. Military Installations in the Region

located in the town of Mayport, and the U.S. Army Corps of Engineers District Office located in Jacksonville.

The Jacksonville Chamber of Commerce estimates that the local economic impact of the Navy in the area exceeds $3 billion per year. This total includes contractor firms that support the naval activities and more than 75,000 retired Navy personnel and their families who reside in the Jacksonville area.

3.3.2 Demographics

The population of Duval County in 1994 was estimated to be 710,592 persons and is projected to increase to 766,200 persons by the year 2000 and to 848,600 persons by the year 2010. Table 3-2 lists the projected population growth for Duval County and the other counties in the Jacksonville MSA for the 1980–2010 period.

Duval County is divided into six planning districts. NAVSTA Mayport is located in Planning District 2 (Greater Arlington) and borders Planning District 6 (North), located north of the St. Johns River. Much of the population growth in Duval County since 1960 has occurred in Planning District 2 (Greater Arlington) and Planning District 3 (Southeast), while the population of Planning District 1 (Urban Core) has been decreasing. Table 3-3 lists the population growth trends of the City of Jacksonville planning districts during the 1960–1989 period. A 1994 analysis of the residential locations of 4,874 shore-based military personnel indicates that approximately 93 percent of personnel residing off base live in Planning Districts 2, 3, and 4 and in the cities of Atlantic Beach and Jacksonville Beach. Approximately 28 percent live in Planning District 2, Greater Arlington; 24 percent live in District 3, Southeast; 10 percent live in District 4, Southwest; 23 percent live in Atlantic Beach; and 9 percent live in Jacksonville Beach (NAVSTA Mayport Personnel Services Detachment, 1994).

NAVSTA Mayport reached its maximum employment in 1987 with a complement of 37 homeported ships, including two conventionally-powered aircraft carriers. At that time, there were 18,726 active duty personnel assigned to the station. The 23 ships homeported at Mayport in late 1995 included one conventional carrier. The base loading was 13,407, but is expected to increase during the next few years, as the number of homeported ships increases. Table 3-4 presents the projected ship loading and personnel for NAVSTA Mayport through the year 2002.

3.3.3 Economic Activity

Economic activity in an area is a reflection of a number of economic variables, including income, composition of earnings, employment, and retail sales. These indicators are monitored on a regular basis by the City of Jacksonville Planning and Development Department to recognize trends in the economy and to develop policy alternatives (Jacksonville Planning and Development Department, 1994b).

TABLE 3-3 POPULATION GROWTH TRENDS IN THE CITY OF JACKSONVILLE PLANNING DISTRICTS, 1960–1990

PD	Name	1960	1970	1980	1990
1	Urban Core	103,924	95,176	56,295	46,662
2	Greater Arlington	55,203	93,539	110,286	147,927
3	Southeast	57,218	69,282	95,753	146,175
4	Southwest	72,832	93,416	102,861	122,527
5	Northwest	127,999	145,773	142,317	132,584
6	North	19,551	27,079	33,408	39,395
	Total Resident Pop.	436,727	524,265	540,900	635,270

PD = planning district

Sources: Jacksonville Planning and Development Department 1990a.
Jacksonville Planning and Development Department 1994b.

TABLE 3-4 PROJECTED SHIP MIX AND NAVSTA MAYPORT MILITARY POPULATION 1994–2002

Ship Description	1994	1995	1996	1997	1998	1999	2000	2001	2002
Projected Ship Mix									
Ticonderoga Class Guided Missile Cruisers (AEGIS)	6	6	6	6	6	6	6	6	6
Arleigh Burke Class Guided Missile Destroyer	0	0	3	5	6	7	7	7	7
Spruance Class Destroyers	3	5	4	4	4	4	4	4	4
Oliver Hazard Perry Class Guided Missile Frigates	10	11	12	11	10	9	7	6	4
Oliver Hazard Perry Class Guided Missile Frigates/NRF	2	0	3	3	3	2	2	2	2
Forrestal Class Aircraft Carrier (CV)	1	1	1	1	1	1	1	1	1
Leahy Class Guided Missile Cruiser	1	0	0	0	0	0	0	0	0
Total	23	23	29	30	30	29	27	26	24
Projected Military Population									
Ticonderoga Class Guided Missile Cruisers (AEGIS)	2,262	2,262	2,262	2,262	2,262	2,262	2,262	2,262	2,262
Arleigh Burke Class Guided Missile Destroyer	0	0	975	1,625	1,950	2,275	2,275	2,275	2,275
Spruance Class Destroyers	951	1,585	1,268	1,268	1,268	1,268	1,268	1,268	1,268
Oliver Hazard Perry Class Guided Missile Frigates	2,010	2,211	2,412	2,211	2,010	1,809	1,407	1,206	804
Oliver Hazard Perry Class Guided Missile Frigates/NRF	380	0	570	570	570	380	380	380	380
Forrestal Class Aircraft Carrier (CV)	3,115	3,115	3,115	3,115	3,115	3,115	3,115	3,115	3,115
Leahy Class Guided Missile Cruiser	422	0	0	0	0	0	0	0	0
Other Ships and Afloat Staffs	2,022	2,022	2,022	2,022	2,022	2,022	2,022	2,022	2,022
Naval Station and Tenants	2,212	2,212	2,212	2,212	2,212	2,212	2,212	2,212	2,212
Total	13,374	13,407	14,836	15,285	15,409	15,343	14,941	14,740	14,338

Sources: CVN Site Development Study Team 1993.
CNO 1993.
Commander Naval Sea Systems Command 1994.
NAVASTA Mayport, 1995.

In 1975, military earnings represented 11 percent of Jacksonville's total earnings. By 1990, this percentage had been reduced to less than 8 percent. Mirroring national trends, the services industry increased its share of earnings during the same period from 15 percent to 24 percent. Most other industries have shown modest decreases in percentage of earnings, losing share primarily to the gains in the services industry (Table 3-5).

Gross retail sales have remained at $1.1 billion since 1985 (adjusted for inflation). Residential hookups have increased by more than 60,000 since 1980, reflecting the sustained population growth in Duval County. Both air passenger and air freight transport have remained at a constant level for five years. Import activity at the Jacksonville Port Authority has decreased slightly since 1985, but this has been balanced by a slight increase in export activity.

The direct military impact of NAVSTA Mayport on the economy is estimated to be $557.3 million per year. This total includes military and civilian payroll ($272.6 million), retired military pay ($75.3 million), military construction projects ($32 million), and military operating budgets ($177.4 million). When multiplied by the local multiplier value of 2.15, the total economic impact of NAVSTA Mayport is estimated at $1.198 billion per year (Mayport PAO, 1993).

3.3.4 Employment

Total employment in Duval County rose significantly during the 1971–1991 period, increasing from 268,768 jobs to 440,593 jobs. Services, retail and finance, and insurance and real estate employment also increased during the period. The military was the only major sector in which employment levels decreased during this period, with a loss of approximately 700 jobs (Table 3-6).

The available labor force, employed workers, and unemployed worker statistics for July 1994 were 366,414, 347,120, and 19,294, respectively (Duval County, 1994). The unemployment rate was 5.3 percent in July 1994, compared to 6.8 percent statewide.

In 1993, the permanent-party military and civilian labor force (including civilian contract employees) at NAVSTA Mayport totalled 15,003 persons. Excluding ships homeported at NAVSTA Mayport, thirteen tenant commands and private organizations employed more than fifty persons. Some of the larger of these include NAVSTA Mayport (1,243 persons), the Fleet Training Center (143 persons), the Naval Hospital Branch Medical Clinic (109 persons), the Navy Exchange (237 persons), the Shore Intermediate Maintenance Activity (661 persons), and the Supervisor of Shipbuilding, Conversion, and Repair (241 persons).

3.3.5 Income

Per capita personal income in Duval County has increased from $10,226 in 1981 to $18,121 in 1991, an increase of 77 percent. Per capita personal income statewide

TABLE 3-5 TOTAL PERSONAL INCOME, PER CAPITA INCOME, EARNINGS BY INDUSTRY, AND SHARE OF EARNINGS BY INDUSTRY IN DUVAL COUNTY, 1975–1990 (IN 000's OF DOLLARS)

	1975	1980	1985	1990
Personal income	3,291,704	5,236,683	8,349,367	11,834,714
Per capita income	5,892	9,128	13,506	17,495
Industry		Amount		
Agriculture	11,463	20,756	36,358	46,446
Mining	4,232	13,410	7,249	7,562
Construction	205,079	270,878	543,528	622,118
Nondurable	166,917	277,364	397,911	457,865
Durable	144,748	260,191	380,595	478,097
Transportation	262,893	486,908	734,732	911,917
Wholesale	256,586	435,902	658,442	863,830
Retail	342,346	487,368	803,415	1,042,172
F.I. & R.E.	285,719	466,288	741,983	1,288,516
Service	453,616	826,305	1,493,864	2,498,762
Fed government	173,299	266,529	413,297	557,789
Military	**326,951**	**391,186**	**675,600**	**827,205**
State and local	276,224	398,180	555,728	879,853
		Share		
Agriculture	0.18%	0.17%	0.16%	0.15%
Mining	0.35%	0.40%	0.44%	0.39%
Construction	0.13%	0.26%	0.09%	0.06%
Nondurable	6.23%	5.17%	6.51%	5.26%
Durable	5.07%	5.30%	4.77%	3.87%
Transportation	4.40%	4.97%	4.56%	4.04%
Wholesale	7.99%	9.30%	8.80%	7.71%
Retail	7.79%	8.32%	7.89%	7.30%
F.I. & R.E.	10.40%	9.31%	9.62%	8.81%
Service	8.68%	8.90%	8.89%	10.89%
Fed government	13.78%	15.78%	17.89%	21.11%
Military	**5.26%**	**5.09%**	**4.95%**	**4.71%**
State and local	9.93%	7.47%	8.09%	6.99%

F.I. = financial institution
R.E. = real estate

Source: Jacksonville Planning and Development Department 1994b.

TABLE 3-6 TOTAL EMPLOYMENT AND EMPLOYMENT BY INDUSTRY IN DUVAL COUNTY, 1971–1991

	1971	1976	1981	1986	1991
Agriculture	1,262	1,647	2,189	3,341	3,739
Mining	116	127	274	276	414
Construction	15,955	15,058	18,701	28,667	24,018
Manufacturing	24,180	25,408	28,995	32,146	29,449
Transportation	20,155	20,789	26,201	27,304	30,682
Wholesale	20,178	20,083	23,368	25,838	25,548
Retail	41,509	47,884	52,167	65,870	72,747
Financial Institutions and Real Estate	25,423	34,017	35,915	43,066	62,896
Service	50,519	57,158	71,282	99,048	115,188
Federal Government	12,244	12,702	13,984	15,844	17,034
Military	34,464	32,831	30,128	36,911	33,767
State and Local	22,763	29,277	30,863	30,767	35,111
Total Employment	268,768	296,981	333,067	409,078	440,593

Source: Jacksonville Planning and Development Department, 1994b

increased from $10,991 to $19,087, 74 percent, during the same period. In 1981, per capita personal income in Duval County was 93 percent of the average income of Florida. By 1991, per capita personal income of Duval County had increased to 95 percent of the state average.

The average annual income for the 13,061 military personnel and 1,057 civilian personnel at NAVSTA Mayport in 1992 was $20,519 and $21,310, respectively. The military payroll was $268.6 million ($91.6 million Naval Station and tenants and $177 million for Ships and Afloat Staffs). The civilian payroll, excluding contract employees, totalled $22.5 million dollars.

3.3.6 Aesthetics

NAVSTA Mayport is bordered on the east by the Atlantic Ocean and on the north by the St. Johns River. Southwest and west of NAVSTA Mayport are salt marshes and wetlands associated with the Intracoastal Waterway. These wetlands also are part of the National Park Service Timucuan Ecological Preserve. North of the St. Johns River are several natural and cultural recreation areas, including Huguenot Park, Fort George Island, and Little Talbot Island State Park (Figures 1-1 and 1-2).

The NAVSTA Mayport wharf area is internal to the naval station. It is bordered by the airfield on the northwest, the Atlantic Ocean on the east, the St. Johns River on the north, and salt marshes and wetlands on the west and southwest. These areas buffer wharf activity from the Mayport community, Greater Arlington, and the beach areas west, south, and southeast of the base.

Aircraft carriers are not new to the communities surrounding NAVSTA Mayport. As recently as July 1993, two carriers were homeported at the naval station, and NAVSTA Mayport has a long history dating to the 1960s of aircraft carriers homeported at the station. The USS Kennedy arrived in September 1995.

3.3.7 Land Use

3.3.7.1 Communities Surrounding NAVSTA Mayport

The Mayport community is situated on a narrow strip of land along the St. Johns River, northwest of NAVSTA Mayport between Chicopit Bay and the ferryboat station. The community of Mayport is comprised predominantly of single-family homes, with limited commercial and industrial uses along the riverfront. Residential densities are mostly low to medium (up to 15 dwelling units per acre). The southern edge of NAVSTA Mayport is bordered by State Road A1A, Wonderwood Drive, and Kathryn Abbey Hanna Park. North of the St. Johns River are Huguenot Park, Little Talbot Island Park, and Fort George Island. Land uses along the boundaries generally provide good buffers between NAVSTA Mayport and surrounding communities. The Atlantic Ocean and the St. Johns River are east and north, respectively, of NAVSTA

Mayport (Figure 1-1). Saltmarsh and wetland communities are located southwest and west of NAVSTA Mayport.

Commercial development around NAVSTA Mayport is located primarily in the community of Mayport, along State Road A1A, and south of the naval complex along Mayport Road. The Naval Exchange Store is located behind Pan American Shopping Center on Mayport Road.

3.3.7.2 Mayport Naval Complex

Existing land use at NAVSTA Mayport is the result of planned incremental development of facilities and activities during station operation. In general, administration, maintenance, and repair functions are located adjacent to the waterfront between Maine Street and Delta Piers, providing a logical grouping of activities around the ships and turning basin. Housing and community facilities are separated from industrial areas by the roadway network, administration facilities, and the golf course. Much of the southwestern section of NAVSTA Mayport is open land, including wetland areas. The turning basin for NAVSTA Mayport is approximately 2,000 feet by 3,000 feet in size and is connected to the St. Johns River via a 500-foot-wide channel. The turning basin is internal to and buffered from the surrounding community by the activities of NAVSTA Mayport. Figure 3-9 depicts land use at the station.

3.3.8 Housing

3.3.8.1 Community Housing Characteristics

The total number of housing units in the Jacksonville MSA increased by 96,791 units (33 percent) from 1980 to 1990. The ratio between owner-occupied and renter-occupied units remained almost unchanged during this period, with owner-occupied units continuing to compose roughly 65 percent of all occupied units. Table 3-7 lists housing characteristics data for the Jacksonville MSA for the years 1980 and 1990.

Duval County is the largest county in the Jacksonville MSA and is the county that is most affected by the presence of NAVSTA Mayport. The total number of housing units in Duval County in 1990 was 284,673, a 25 percent increase from 1980 (BEBR, 1993). Single-family occupied units comprised 62 percent of all units.

There are more than 70,000 apartment units in Duval County, the greater Orange Park area, northern St. Johns County, and the Beaches (Jacksonville Business Journal, 1994). A second-quarter 1994 Apartment Market Survey of approximately 54,000 units conducted by the Jacksonville Planning and Development Department and the Northeast Florida Apartment Council indicated an overall occupancy rate of 93.2 percent for Greater Jacksonville area apartments. The survey reported an average monthly apartment rent for the Greater Jacksonville area of $482.

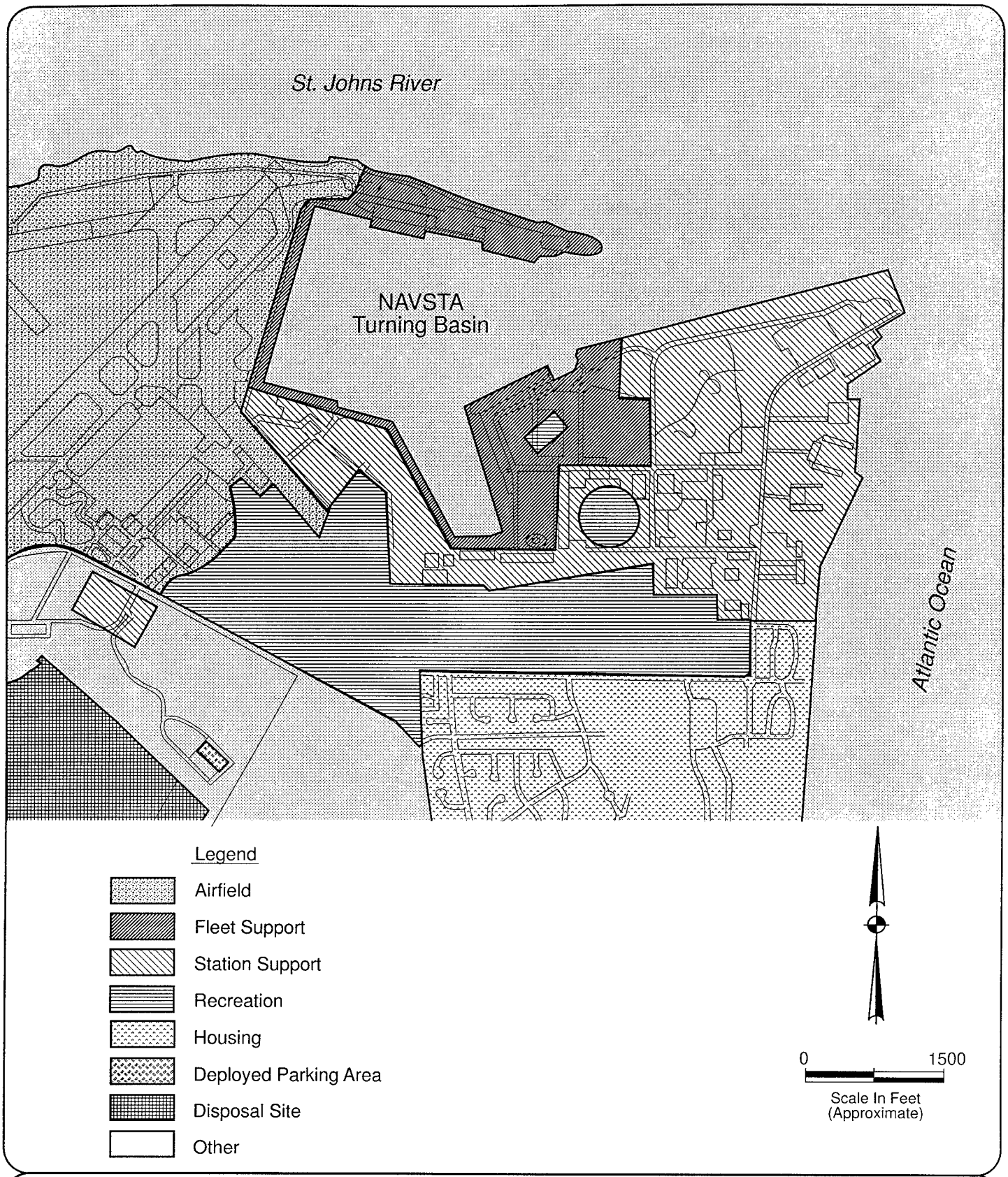


Figure 3-9. Existing Land Use NAVSTA Mayport
(SOUTHDIV, 1989)

TABLE 3-7 HOUSING CHARACTERISTICS OF THE JACKSONVILLE MSA, 1980 AND 1990

	1980	1990	Change 1980–1990
Population	722,252	906,727	25.54%
Households	260.1	344.8	32.56%
Average size	2.73	2.57	-5.86%
Housing units	287,569	384,360	33.66%
Year around	285,526	351,528	23.12%
Occupied units	259,596	343,526	32.33%
Owner-occupied	169,185	222,571	31.55%
Percent owner-occupied	65.17%	64.79%	-0.59%
Renter-occupied	90,411	120,955	33.78%
Percent renter-occupied	34.83%	35.21%	1.10%
Total vacant units	27,973	40,834	
Median value	unknown	$76,125	
Median contract rent	unknown	$370	

Source: BEBR 1980.
BEBR 1990.
BEBR 1992.

3.3.8.2 Housing for Navy Military Personnel

Family-housing assets of NAVSTA Mayport total 1,331 units, consisting of 681 on-base single-family or duplex units at Bennett Shores (153 for officers; 528 for enlisted); 50 on-base, single-family, mobile home spaces; 400 two-, three-, four-, and five-bedroom units in Ribault Village, located approximately one mile south of NAVSTA Mayport; and 200 two-bedroom apartments for enlisted personnel at William S. Johnson Navy Family Housing Community on Mindanao Drive in Jacksonville, 15 miles southwest of NAVSTA Mayport. The latter units are privately owned. The yearly operations and maintenance budget for NAVSTA Mayport family housing is approximately $9.2 million.

The current occupancy rate for Navy family housing is 99 percent. There is a waiting list of over 1,300 persons. Waiting time averages from 6 months to 14 months, depending on the type of unit (NAVSTA Mayport, 1994b). Waiting times for two-bedroom units range from 8 to 14 months, three-bedroom units range from 8 to 12 months, four-bedroom units range from 6 to 12 months, and five-bedroom units range from 3 to 6 months.

The 1993 Family Housing Survey (NAVSTA Mayport Family Housing Office, 1994) reported that 752 out of 810 eligible officers and 5,535 out of a total of 6,419 eligible enlisted personnel were living with their families in the Jacksonville area. Of the 752 officers, 743 were considered suitably housed, and 9 were considered unsuitably housed. Of the 5,535 enlisted personnel, 5,258 were considered suitably housed, and 277 were considered to be unsuitably housed. All 145 officers and 1,122 enlisted personnel in military housing were suitably housed. Excess distance from NAVSTA Mayport, substandard housing, and excess cost over the Military Authorized Housing Cost (MAHC) were listed as reasons for the small percentage of unsuitably housed personnel. Table 3-8 lists the 1993 Family Housing Survey results.

Single personnel quarters at NAVSTA Mayport include 1,271 bachelor enlisted quarters (BEQ) and 107 bachelor officers quarters (BOQ), for a total of 762 rooms. All rooms are currently occupied. Ship personnel do not receive barracks assignments unless they arrive prior to the arrival of the ship to which they are assigned. A BEQ is reserved for the use of personnel awaiting the arrival of ships and for personnel from other stations who are temporarily in training at NAVSTA Mayport (NAVSTA Mayport, 1994).

3.3.9 Utilities

3.3.9.1 Water Supply

Potable water for much of Duval County is provided by the Water Services Division of the Jacksonville Public Works Department. Other large areas of the county are serviced by private wells or by a number of private utility companies. Jacksonville Beach, Atlantic Beach, and Neptune Beach each operate independent potable water

TABLE 3-8 SUMMARY OF DD 1377—TABULATION OF FAMILY HOUSING SURVEY AT NAVAL COMPLEX MAYPORT AS OF SEPTEMBER 30, 1993

Housing Status	Officers	Eligible Enlisted	Subtotal	Other Enlisted	Total
Potential number of families	810	6,419	7,229	788	8,017
Personnel not living with family	58	884	942	269	1,211
Percent not living with families	7.1%	13.8%	13.0%	34.1%	15.1%
Personnel living with family in area	752	5,535	6,287	519	6,806
In military housing	145	1,122	1,267	58	1,267
In private housing	598	4,136	4,734	404	5,138
Percent living with family in area	92.8%	86.2%	87.0%	65.9%	84.9%
Percent in military housing	19.3%	20.3%	20.2%	11.2%	18.6%
Percent in owner-occupied homes	79.5%	74.7%	75.3%	77.8%	75.5%
Suitably housed	743	5,258	6,001	404	6,405
Percent suitably housed	91.7%	81.9%	83.0%	51.3%	79.9%
In military housing	145	1,122	1,267	0	1,267
In private housing	598	4,136	4,734	404	5,138
Unsuitably housed	9	277	286	115	401
Percent unsuitably housed	1.1%	4.3%	4.0%	14.6%	5.0%
In military housing	0	0	0	0	0
In private housing	9	277	286	115	401

Source: NAVSTA Mayport Family Housing Office 1994.

treatment and distribution systems. Potable water needs are met via groundwater withdrawals from the two surficial aquifers and the deeper Floridan Aquifer system.

The City of Jacksonville water supply system is composed of three water supply areas (south, north, and Mandarin areas) supplied by fifteen regional water plants and thirteen smaller nonregional plants. The estimated 1995 system delivery capacity for all three water supply facilities is approximately 233 million gallons per day (MGD). The estimated demand is approximately 119 MGD, or 51 percent of the available capacity (Jacksonville Planning and Development Department, 1990c).

NAVSTA Mayport currently provides its own water supply and distribution systems. Potable water is obtained from four, 12-inch-diameter, 1,000-feet-deep wells that draw water from the Floridan Aquifer. Individual well capacities range from 2.1 to 2.9 MGD, with a combined total pumping capacity of approximately 10.0 MGD and an effective pumping capacity of 7.0 MGD (SOUTHDIV, 1989). The system operates at a pressure of 51 psi.

New treatment facilities, including a control building, have been constructed recently at NAVSTA Mayport and consist of dual aeration equipment to remove hydrogen sulfide and pre- and post-chlorination equipment to disinfect the water. In addition, a newly constructed 2-million-gallon (MG) storage tank, a 10,000-gallon hydropneumatic tank, and an existing 0.5 MG storage tank distribute water using three 2,000-gallons-per-minute (GPM) pumps and three 3,000-GPM pumps. The hydropneumatic tank is used to equalize the pressure differential during pumping cycles. A 250,000-gallon elevated tank is scheduled for demolition (SOUTHDIV, 1995). Water capacity is sufficient for normal use and for fire-fighting purposes. The average daily usage of potable water at NAVSTA Mayport varies with the number of ships in port. The pumping capacity is adequate for current requirements.

3.3.9.2 Wastewater Collection and Treatment

The Jacksonville Public Works Department and a number of privately owned wastewater treatment systems and septic tanks provide wastewater collection and treatment in southeastern Duval County. Areas immediately north of the St. Johns River are not served by public sewer systems. Small package treatment plants and septic systems provide wastewater treatment to areas south of the St. Johns River and east of the AIWW. West of the AIWW, some of the area is served by a force main and pumping stations, while much of the area remains on septic systems (Jacksonville Planning and Development Department, 1990f).

The existing sewage collection system at NAVSTA Mayport, which was upgraded approximately four years ago, consists of 130,000 linear feet (LF) of sanitary sewer line, force mains, pumping stations, and collection and holding tank systems. The on-base Domestic Wastewater Treatment Plant (DWTP) provides secondary treatment of nonindustrial wastewater with a permitted design capacity of 2.0 MGD. The average

daily generation of wastewater varies with the number of ships in port, but is currently consistently below treatment capacity.

Oily wastewater from ships is collected and pretreated at the Oily Wastewater Treatment Plant (OWTP). The collection and treatment facilities have a design capacity of 0.288 MGD and consist of four pump stations, three 300,000 gallon Load Equalization Tanks, dissolved air flotation, chemical treatment facilities, clarifier, sludge thickener, and three 155,000 gallon oil recovery tanks. A recent study indicates the physical condition of the OWTP is good (SOUTHDIV, 1995).

Construction recently has been completed at NAVSTA Mayport to permanently connect the discharge from the OWTP into the Domestic Wastewater Treatment Plant, to provide further treatment of the waste prior to discharge to the St. Johns River.

Currently, sewage and bilge water from ships in port are collected pierside. NAVSTA Mayport has no permits for discharges from the ships. Current Navy policy prohibits overboard discharges while in port.

3.3.9.3 Solid and Hazardous Waste Management

Solid waste collection services are provided by private haulers under contract with the City of Jacksonville. The city operates Trail Ridge Landfill on Highway 301 in Baldwin, approximately 40 miles west of NAVSTA Mayport. The landfill, opened in 1992, has a twenty-year life expectancy. An estimated 1,800 to 1,900 tons of solid waste are deposited daily, six days per week, at this facility. Recyclables collected curbside are taken to the BFI recycling facility on Phillips Highway. White goods, including such items as refrigerators and stoves, are taken to Jacksonville's white goods facility on Commonwealth Avenue, where capacitors and freon are removed before sending these items to a shredding facility. The Beach communities all operate independent solid waste collection departments (Duval County, 1994).

Solid waste collection at NAVSTA Mayport is provided by private haulers. Residential and industrial waste collection occurs at the main installation and the collection of refuse from housing at Ribault Bay Village. Currently, solid waste collected at NAVSTA Mayport is disposed at the Trail Ridge Landfill.

NAVSTA Mayport is classified as a Class I or Large-Quantity Generator (producing more than 1000 kilograms per month) of hazardous wastes. It is subject to full regulation under the Resource Conservation and Recovery Act (RCRA). This regulation includes conducting tests of hazardous wastes, properly storing and managing wastes on site, preparing manifests, and properly disposing of the wastes off site. Hazardous wastes generated at NAVSTA Mayport are disposed by the Defense Reutilization and Marketing Office.

NAVSTA Mayport operates an extended (greater than 90-day) storage facility in accordance with Part B of RCRA (Florida permit number H016-220719) and the

Hazardous and Solid Waste Amendments to RCRA (HSWA; USEPA identification number FL9170024260). This facility has a permitted capacity of 460 55-gallon drums of hazardous waste. The facility currently operates at approximately 35 percent of its capacity, leaving approximately 300 drums of unused capacity. Hazardous waste generation at NAVSTA Mayport averages approximately 600,000 pounds per year, but varies yearly with the number of ships serviced and types of operations (NAVSTA Mayport, 1995).

The HSWA portion of the Part B storage facility permit requires investigation into all potential sources of soil and groundwater contamination present at NAVSTA Mayport. Potential sources include any sites identified by present or past station personnel as having been: sites used to dump, store, or contain any solid or toxic wastes; sites of potential spills or leaks of potentially hazardous liquids; or areas of known or suspected contamination identified under the Installation Restoration program. These areas have been designated as Solid Waste Management Units (SWMUs) and are to be investigated, depending on the extent of the potential or observed contamination.

Installation Restoration Sites

The Installation Restoration Program (IRP) is a Department of Defense (DOD) effort to identify, characterize, and remediate environmental contamination of military installations resulting from hazardous waste management practices. The DOD developed the IRP in 1980 to establish a process to evaluate past hazardous waste management and disposal sites on DOD property to control the migration of hazardous contaminants. The IRP also was initiated to control hazards to human health and the environment that may have resulted from past disposal operations.

A RCRA Facility Assessment (RFA) for NAVSTA Mayport was conducted in 1989 by EPA Region IV. The RFA identified 56 solid waste management units (SWMUs) and two areas of concern (AOC). Fifteen of the SWMUs were determined not to require further action, eighteen required RCRA Facility Investigations (RFI) and twenty-three required further action. (NAVSTA Mayport, 1993a). The Navy began the first phase of an RFI in compliance with the Resource Conservation and Recovery Act (RCRA) to determine the type and extent of contamination, establish criteria for clean up, and identify and evaluate any remedial action alternatives and costs in 1992. The RFI included a preliminary assessment to identify sites recommended for investigation through record searches and interviews. Subsequent site inspections were conducted to confirm which areas contained contamination.

Seven of the SWMUs identified during the RFA are located near the potential site at Wharf F. These include: 1) SWMU 1 - Landfill A; 2) SWMU 23 - Jacksonville Shipyards, Inc.; 3) SWMU 24 - North Florida Shipyards, Inc; 4) SWMU 25 - Atlantic Marine, Inc.; 5) SWMU 44 - Wastewater Treatment Facility Clarifiers 1 and 2; and 6) SWMU 45 - Wastewater Treatment Facility Sludge Drying Beds; and 7) SWMU 46 - SIMA Engine Drain Sump. The locations of each of these sites in presented in Figure 3-10.

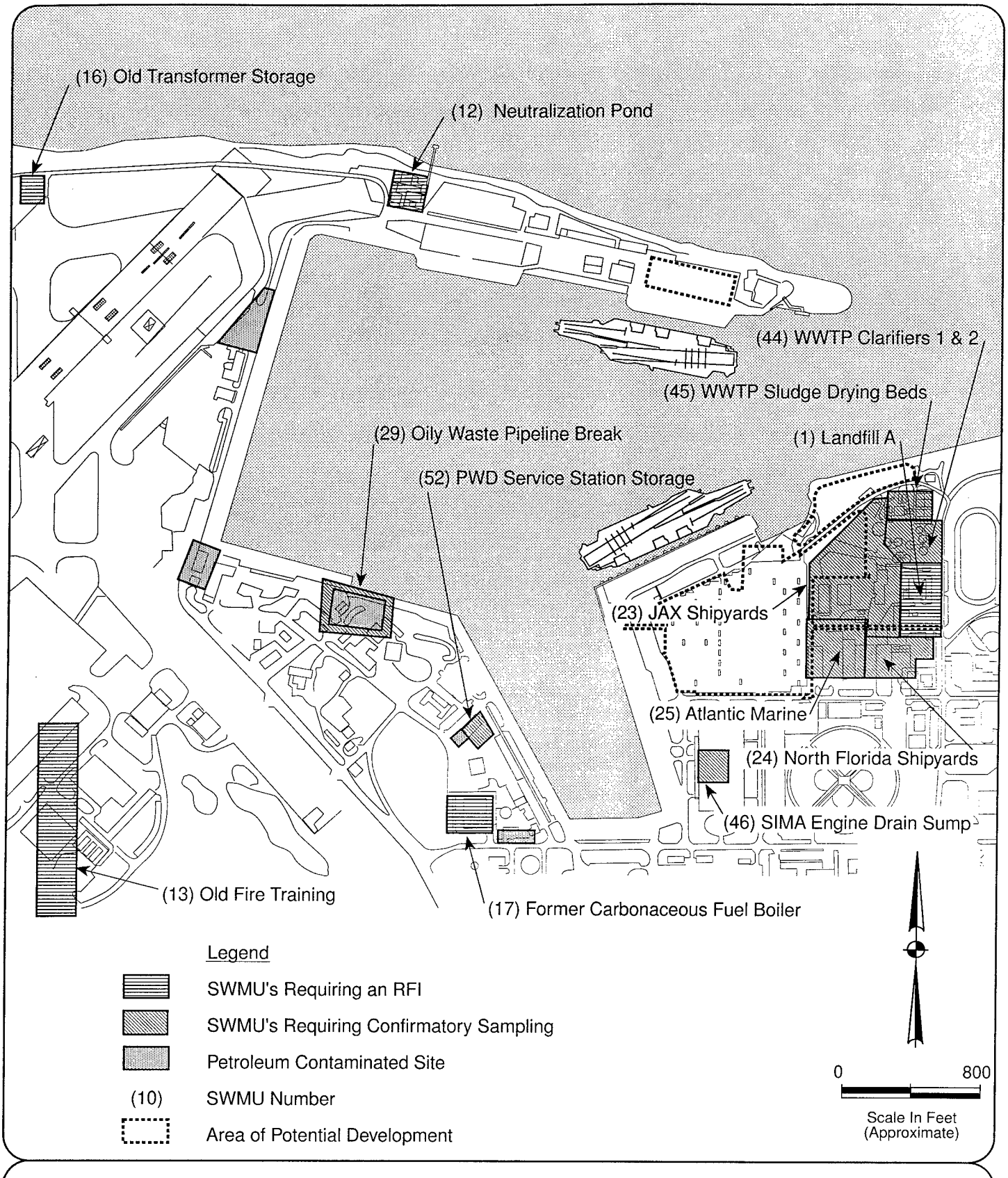


Figure 3-10. Installation Restoration Sites (NAVSTA Mayport, 1994b)

SWMU 46 was transferred to the FDEP Petroleum Contamination Program. The third phase of the RFI was completed in 1995 for SWMUs 1, 23, 24, 25, 44, and 45. Further investigation in 1996 is required at these SWMUs to determine the extent of contamination found in shallow soils on the sites (NAVSTA Mayport, 1996).

3.3.9.4 Energy

Electric power in the region is provided by Jacksonville Electric Authority (JEA). Electricity is produced primarily by the Northside Station and Kennedy Generation Station and is distributed through an extensive system of underground and overhead transmission lines. Florida Power and Light Company provides power to Jacksonville Beach and Neptune Beach through a substation in Jacksonville Beach.

NAVSTA Mayport receives electrical power through the JEA transformer located south of the main gate on the west side of Mayport Road. The substation reduces the 138 kV transmission line voltage to 26.4 kV.

The existing shore power at wharves C-1 and C-2 is 480 volts, 9,600-amp service (SOUTHDIV, 1994). This is sufficient power to support a non-nuclear powered aircraft carrier at each berth.

3.3.9.5 Steam

Steam is generated at NAVSTA Mayport by one boiler plant, located in building 1241. The plant, which has a capacity of 100,000 pounds per hour (lb/hr), is located on Wharf Charlie, and provides steam to the wharf distribution system. Current steam use ranges from 20,000 to 30,000 lb/hr.

3.3.9.6 Compressed Air

The Compressed Air Plant (Building 391) supplies compressed air to Wharves Delta and Echo at 110 to 120 psi. A mobile compressor is used to supply compressed air to the other wharves. In times of peak demand, this method may cause problems with scheduling repair work on the ships.

3.3.10 Transportation

Jacksonville maintains and operates a large rail network system, growing highway systems and a busy port. Increasing airline passenger travel combined with other transportation facilities makes the city a major distribution center for the southeastern United States.

3.3.10.1 Regional Traffic Circulation and Roadway Performance

Major freeway routes serving the Jacksonville area include Interstate Highway 10 (I-10), United States Highway 90 (U.S. 90), Interstate Highway 95 (I-95), and Interstate

Highway 295 (I-295). I-10 and U.S. 90 are east-west highways that link Jacksonville to Tallahassee, Pensacola, and the Gulf of Mexico states (Florida, Alabama, Mississippi, Louisiana, and Texas). I-95 is the major north-south highway linking Jacksonville to the southeastern coast of Florida and the northeastern United States. I-295 forms a perimeter route that extends westward from I-95 on the north, around the Jacksonville urban area, to I-95 on the south side of the city. Major highway facilities serving the Jacksonville region are shown in Figure 1-1.

Travel to NAVSTA Mayport and beaches in the vicinity of the naval station is provided by three east-west arterials: Atlantic Boulevard, Beach Boulevard, and J. Turner Butler Boulevard. Atlantic Boulevard, a varying four- to six-lane roadway, provides the most direct access to NAVSTA Mayport via Mayport Road, a north-south arterial that intersects Atlantic Boulevard just east of the AIWW. Mayport Road varies from seven lanes at the intersection with Atlantic Boulevard to four lanes at the NAVSTA Mayport main gate entrance. Approximately two miles south of the NAVSTA Mayport main gate, Mayport Road forks west and continues northward as a two-lane road, State Road A1A (S.R. A1A), to the town of Mayport. Mayport Road terminates at the Buccaneer Trail Ferry, which provides service across the St. Johns River. North of the Mayport Road cut-off, the road becomes State Road 101 (S.R. 101), or Old Mayport Road.

For management purposes, the City of Jacksonville maintains a database of roadway links and associated operating conditions in its jurisdiction. Table 3-9 provides a summary of peak-hour travel conditions for selected roadway facilities in the vicinity of NAVSTA Mayport. Currently, Mayport Road from NAVSTA Mayport to Church Road is operating near maximum peak-hour capacity (approximately 90 percent capacity used). The available capacity of this facility is approximately 334 to 429 vehicles during the peak-hour period. Atlantic Boulevard, from St. Johns Bluff to the AIWW, is also operating near peak-hour capacity with approximately 76 percent to 98 percent of the design capacity already used.

Annual average daily traffic (AADT) volumes for selected roadway facilities in the vicinity of NAVSTA Mayport were obtained through the Florida Department of Transportation (FDOT). AADT volumes for 1992 on Atlantic Boulevard in the vicinity of NAVSTA Mayport vary from 22,000 vehicles east of Mayport Road to 48,000 vehicles west of Mayport Road between the AIWW and San Pablo Road. Comparison with historical traffic data (1983 to 1992) indicates a general increase in traffic along Atlantic Boulevard ranging from approximately 30 percent to 41 percent. The one exception to this trend was the Atlantic Boulevard segment between Sherry Drive and Third Street, which experienced a 6 percent decrease in traffic. AADT volumes for 1992 from the intersection of S.R. A1A and Mayport Road south of NAVSTA to north of Atlantic Boulevard range from 42,500 to 43,500 vehicles. Traffic on this segment has increased approximately 53 percent since 1983. Table 3-10 summarizes roadway AADT volumes in the vicinity of NAVSTA Mayport.

TABLE 3-9 SUMMARY OF PEAK HOUR TRAFFIC CONDITIONS AND ROADWAY PERFORMANCE FOR SELECTED ROADWAYS IN THE VICINITY OF NAVSTA MAYPORT, JACKSONVILLE, FLORIDA

Facility Name	Segment	Segment Classification	Travel Lanes	Maximum PH Capacity	1995 PH Traffic	Reserve Capacity	Percent Capacity Used	Available Capacity	1995 LOS
SR A1A	Ferry Slip to Wonderwood Road	Minor Arterial	2	2,250	428	0	19.0%	1,822	B
	Wonderwood Road to Mayport Road	Minor Arterial	2	1,480	910	0	61.5%	570	B
Mayport Road	NAVSTA Mayport to SR A1A	Minor Arterial	4	3,110	2,776	0	89.3%	334	C
	SR A1A to Church Road	Minor Arterial	4	4,888	4,459	0	91.2%	429	F
Atlantic Blvd.	St. Johns Bluff to Girvin Road	Principal Arterial	6	6,110	3,818	2,194	98.4%	98	E
	Girvin Road to San Pablo Road	Principal Arterial	6	6,110	3,981	661	76.0%	1,468	B
	San Pablo Road to Intracoastal Waterway	Principal Arterial	4	4,570	3,981	219	91.1%	370	E

PH = Peak Hour Traffic Volume
LOS = Level of Service

Source: City of Jacksonville, 1995

TABLE 3-10 SUMMARY OF AADT VOLUMES FOR SELECTED ROADWAYS IN THE VICINITY OF NAVSTA MAYPORT, JACKSONVILLE, FLORIDA

Roadway	Segment	AADT Volume (vehicles) 1983	1988	1992	Change 1983–1988	Change 1988–1992	Change 1983–1992
S.R. A1A	North of Ferry Slip	2,176	2,035	2,900	-6.5%	42.5%	33.3%
	South of Ferry Slip	4,431	6,080	4,500	37.2%	-26.0%	1.6%
	Wonderwood Road to Mayport Road	ND	ND	10,832			
Mayport Road	S.R. A1A to Church Road	28,371	45,695	43,500	61.1%	-4.8%	53.3%
	200′ north of Atlantic Boulevard	27,841	40,430	42,500	45.2%	5.1%	52.7%
Atlantic Boulevard	St. Johns Bluff to Girvin Road	32,869	46,880	43,500	42.6%	-7.2%	32.3%
	Girvin Road to San Pablo Road	ND	ND	46,995			
	San Pablo Road to Intracoastal Waterway	33,976	46,880	48,000	38.0%	2.4%	41.3%
	200′ east of Mayport Road	26,563	34,485	34,500	29.8%	0.0%	29.9%
	Sherry Drive & Third Street	23,404	30,218	22,000	29.1%	-27.2%	-6.0%

ND = No Data Available
AADT = Average Annual Daily Traffic

Source: FDOT 1993.

The operating condition of a roadway often is described in terms of a level of service (LOS). The LOS is the maximum number of vehicles that can pass over a given section of roadway or intersection during a specified time period while maintaining a given operating condition. Service levels range from A to F, with Level A representing a condition of free flow, and Level F representing a condition of forced flow at low speeds (Jacksonville Planning and Development Department, 1990g). The City of Jacksonville has defined the minimum acceptable operating level of service for roadways within the city as follows:

Jacksonville Urban Service Area	
Freeways	Level of Service D
Principal Arterials	Level of Service D
Minor Arterials, Collectors	Level of Service E

Jacksonville Rural Area	
Freeways	Level of Service C
Principal Arterials	Level of Service C
Minor Arterials, Collectors	Level of Service D

Existing LOS on Atlantic Boulevard in the vicinity of Mayport Road is Level E, with improvement in operating conditions to Levels B and D traveling west. The adopted LOS standard for this facility is Level D. Existing LOS on Mayport Road ranges from Level C (from NAVSTA Mayport to State Road A1A) to Level F (near Atlantic Boulevard). The adopted LOS standard for Mayport Road is Level E. Operating LOS conditions for roadways in the vicinity of NAVSTA Mayport are provided in Table 3-9.

3.3.10.2 Base Access

Access to NAVSTA Mayport is provided through several gates located on the south, southeast, and northwest perimeters of the naval station. The primary access point to NAVSTA Mayport is the main gate located on Mayport Road. Mayport Road has four lanes at the main gate. The main gate is open 24 hours a day, seven days a week. A second gate, known as the Seminole or Kathryn Abbey Hanna Park gate, is located on Baltimore Street at the southeast corner of the station. The gate is open from 0600 to 0900 for inbound traffic and then converts to outbound traffic only until 1500. At 1500, it changes to two-way traffic until 1800, when the gate is closed. Entrance to NAVSTA Mayport also is possible through the airfield gate located on the northwest edge of the naval station. This access gate is open between 0530 and 1800. However, it provides a circuitous route to NAVSTA Mayport through the airfield area. No automobile entrance is available from the north, where NAVSTA Mayport abuts the town of Mayport and the St. Johns River (SOUTHDIV, 1989). Figure 3-11 shows the location of access gates to NAVSTA Mayport in the vicinity of the turning basin.

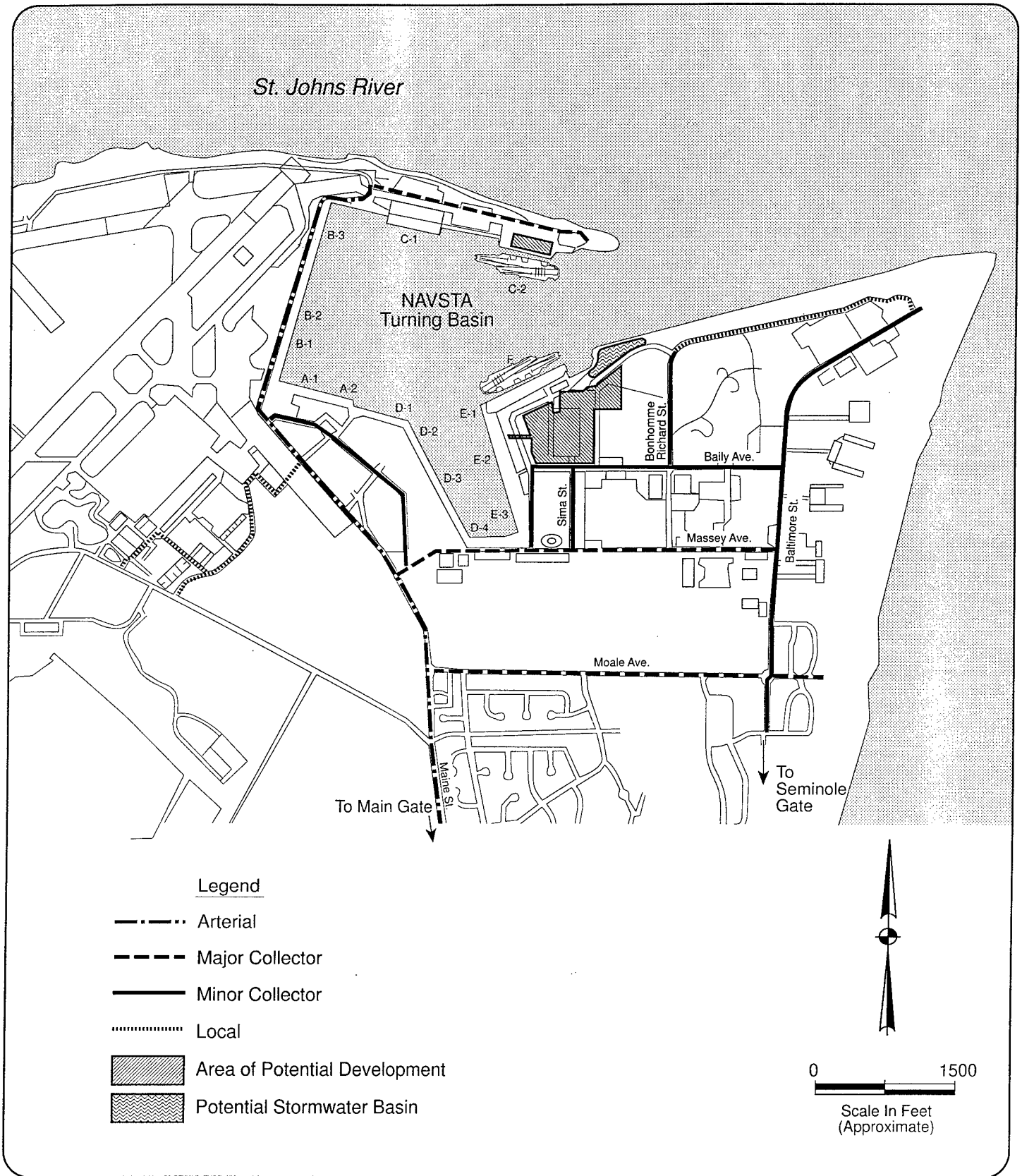


Figure 3-11. NAVSTA Mayport Traffic Circulation
(SOUTHDIV, 1989)

3.3.10.3 Base Circulation

Traffic circulation at NAVSTA Mayport is provided by a system of north-south and east-west arterial and collector streets. Maine Street, the extension of Mayport Road inside the main gate and the principle north-south arterial, provides the primary access to NAVSTA Mayport administration facilities and the wharf area. Massey Avenue and Moale Avenue are major east-west collector streets that extend from Maine Street eastward. These major collector streets provide access to the Shore Intermediate Maintenance Activity (SIMA), and housing and community facilities. Baltimore Avenue is a minor collector on the east side of NAVSTA Mayport that provides access to the Fleet Training Center (FLETRACEN) and recreational facilities. Figure 3-8 shows the location of access gates and circulation routes within NAVSTA Mayport.

The duty hours for NAVSTA Mayport are 0730 to 1600 hours. The ships in port post their own schedules, with a typical workday from 0700 to 1530 or 1600 hours. These duty hours affect the peak hour traffic volumes on the station's roadway network and in the surrounding area and, to some extent, the ability of employees to carpool. According to a Military Traffic Management Command Traffic Engineering Study, at least 70 percent of NAVSTA Mayport employees drive alone to work. Traffic demand management measures, such as carpools, could have a positive impact on traffic circulation and parking at the station (SOUTHDIV, 1994).

3.3.10.4 Base Parking

Parking at NAVSTA Mayport is provided by a number of surface parking facilities scattered throughout the base. In general, each activity and building is provided with a parking lot. However, several large parking lots are not assigned to any particular buildings. The intended use of these areas is to provide parking for shipboard personnel, particularly when carriers are in port. Major parking problems exist at the carrier wharves and areas adjacent to the wharves around the turning basin when ships are in port. Parking problems have also been identified in the vicinity of the Public Works Department and NAVSTA Mayport Administration facilities adjacent to Alpha and Delta wharves (SOUTHDIV, 1989).

3.3.10.5 Planned Roadway Improvements

Mayport Road is currently experiencing congestion of traffic inbound to NAVSTA Mayport in the morning and congestion in outbound traffic in late afternoon, especially at the Mayport Road and Atlantic Boulevard intersection. The Jacksonville Transportation Authority has plans to construct a major interchange at this intersection; the acquisition of right-of-way is expected to cost $9,712,000 and is considered a Priority 1; however, no action has been undertaken at the time of this report.

In addition to the interchange improvements, the Jacksonville Transportation Authority (JTA) is planning an extension of Wonderwood Drive to relieve traffic congestion. The extension will begin at Mayport Road, cross the AIWW, follow parts of Mount

Pleasant, McCormick, Fort Caroline and Merrill Roads and tie in at the Southside Connector and S.R. 9A. The $116.1 million project will be a four- or six-lane arterial road, with traffic signals and various access points from Mayport to its terminus at the Southside Connector and S.R. 9A. JTA estimates that 189 homes and eight businesses will be displaced as a result of the extension. The City's 2010 Comprehensive Plan shows the extension to be built in 2010; however, the JTA hopes to complete the project between 2005 and 2007.

The Military Traffic Management Command (MTMC) Traffic Engineering Study published in 1986 supports the City's recommendation for a new east-west connector. A significant benefit of the new roadway is that it would provide a second major means of access to NAVSTA Mayport. There have been several accidents in recent years whereby Mayport Road was closed to traffic for several hours. In addition, the MTMC Traffic Engineering Study supports the findings that the new roadway would significantly reduce inbound, peak-hour traffic on Mayport Road. The Florida Department of Transportation (FDOT) Five-Year Work Program has funded a Project Development and Environmental (PD&E) study of this project to be conducted in FY 1994/95.

3.3.10.6 Air Transportation Facilities

Jacksonville Port Authority (JAXPORT) operates three public air transportation facilities in the Jacksonville area: Jacksonville International Airport (JIA), Craig Municipal Airport, and Herlong Airport. JIA, a public all-weather airport facility, offers domestic and international passenger flights, air cargo, and mail transport services. JIA is located approximately 11 miles north of downtown Jacksonville and 18 miles northwest of NAVSTA Mayport. The airport operates 24 hours a day, with approximately 248 daily arrival and departure operations among 13 airline carriers. Approximately 2.85 million passengers travelled through JIA in 1993. Airport officials expect the number of passengers traveling through JIA to increase to more than three million in 1995.

Craig Municipal Airport, located approximately six miles southwest of NAVSTA Mayport in Arlington, is a general aviation facility that handled approximately 124,500 annual operations in 1985. Estimates for 1995 and 2005 indicate that annual general aviation operations at Craig will increase to approximately 170,000 and 175,000, respectively (Jacksonville Planning and Development Department, 1990d). Herlong Airport, also a general aviation facility, is located 25 miles southwest of NAVSTA Mayport. General aviation operations forecasted for 1995 and 2005 total 78,100 and 91,200, respectively (Jacksonville Planning and Development Department, 1990d).

Aviation facilities at NAVSTA Mayport consist of a fully operational, fixed-wing runway, 8,000 feet long by 200 feet wide. Helicopter pads are present in the southwest and northeast quadrants of the airfield. Figure 1-1 shows the location of the JIA, the Craig Municipal Airport, and the Herlong Airport in relation to NAVSTA Mayport. Military aviation facilities in the vicinity of NAVSTA Mayport and within the city limits

of Jacksonville include NAS Cecil Field, NAS Jacksonville, and Outlying Landing Field (OLF) Whitehouse.

3.3.10.7 Mass Transit Facilities

The Jacksonville Transportation Authority (JTA) provides five types of mass transit services in the Jacksonville area. These services include fixed bus routes, flyer bus routes, downtown shuttles, local area service, and demand service for the elderly and handicapped. JTA has a fleet of 165 buses; 136 of which operate on the regular, fixed route service. Route BH3 provides direct service to NAVSTA Mayport and terminates at the carrier piers. From NAVSTA Mayport, route BH3 runs south, providing connections to other bus routes to downtown Jacksonville at Atlantic Boulevard, and eventually terminates at Beach Boulevard in downtown Jacksonville Beach.

3.3.10.8 Port Facilities

The Port of Jacksonville, located along both banks of the lower 24.9-mile stretch of the St. Johns River, is one of the largest and busiest deepwater ports in the southeast, consisting of approximately 80 wharves and piers owned and operated by a variety of public and private entities. The facilities are used for ship repair, general cargo shipping, and other uses. The capabilities of the port allow cargo to be transferred easily between rail cars, trucks, and ships. The port area extends from the jetties in the Atlantic Ocean inland and upriver to the center of downtown Jacksonville.

Ship berthing facilities at NAVSTA Mayport are provided by 15 berths located along the perimeter of the turning basin. The turning basin is approximately 2,000 feet by 3,000 feet in size and is connected to the St. Johns River via a 500-foot-wide and 42-foot-deep channel. NAVSTA Mayport is currently the homeport for 23 ships.

NAVSTA Mayport wharves C-1 and C-2 have been configured to support conventionally-powered aircraft carriers. The total wharf length (C-1 plus C-2) in the turning basin area is 2,500 feet. The depth of water adjacent to the wharf is 42 feet below mllw at a distance of 11.5 feet from the face of the sheet pile cofferdam. The carriers are berthed against camels and a fendering system that places them approximately 38 feet from the wharf face.

Opposite wharves C-1 and C-2, along the length of the turning basin, is the recently constructed Wharf F. Wharf F is a 1,050-linear-foot repair wharf, constructed to accommodate many classes of surface combatant vessels for intermediate and other levels of maintenance (SOUTHDIV, 1994).

3.3.10.9 Rail Facilities

Passenger rail service to the City of Jacksonville is provided by Amtrak. Rail routes serving the cities of Orlando, Tampa, and Miami access the terminals in Jacksonville. Jacksonville is served by three major freight companies: CSX Corporation and a

subsidiary CSX Intermodal; Norfolk Southern Corporation and a subsidiary Triple Crown Services, Inc.; and Florida East Coast Railway. These rail carriers offer 34 dedicated trains each day to and from Jacksonville (White Publishing Company, 1994).

3.3.11 Community Services

3.3.11.1 Education

3.3.11.1.1 Community Characteristics

The Duval County Public Schools operated 150 schools during the 1993-1994 school year, with an enrollment of approximately 118,000 students (Duval County Public Schools, 1994). To accommodate student growth, 20 Duval County schools have adopted a modified calendar (Jacksonville Business Journal, 1994), enabling four schools to accommodate the load of five schools. Even with the modified calendar, the school system is still overcrowded. Seven new schools were built during the 1991-1994 period, but portable classrooms still are necessary at many schools (Jackson, 1994).

The total cost of educating a child in the public schools of Duval County during the 1993-1994 school year was estimated at $4,309. The 1993-1994 school budget was $543,762,000. Revenue from state aid totaled $314,204,000 (57.8 percent of the county school budget), including $26 million from the state lottery and categorical funds; federal aid totalled approximately $37 million (6.8 percent), and property taxes and local effort totaled approximately $192,500,000 (35.4 percent) (Jackson, 1994).

Part of the federal aid to Duval County Public Schools is in the form of U.S. Department of Education (DOE) stipends for federally connected children (including military and DOD civilian employee's children). The stipends, or "impact aid," are designed to provide compensation to a district for lost property taxes, which are a major source of educational funding. Up until October 1994, Section 3 of the program provided assistance to school districts that provided free public education services (1) to children who live on and whose parents work on federal property (Category A students) and (2) to children who live on federal property or live with a parent (military or civilian) employed on federal property (Category B students). The 1994 Amendments to P.L. 81-874 limit civilian B payments to schools where these students number at least 2,000 in average daily attendance (ADA) and constitute at least 15 percent of the total district ADA.

The Impact Aid program reimburses school districts for a portion of the school budget lost through the attendance of federally connected children. In the case of Category A students, the reimbursement is for the loss of property taxes for both residences and places of work. In the case of Category B students, the reimbursement is generally for the loss of property taxes from the workplace and not from residences, since the homeowners typically pay property taxes on their residences. The reimbursement for Category B students is modest in comparison with Category A reimbursements (DOE,

1994a). Students living off-base would be Category B students, and students living at NAVSTA Mayport and Ribault Village would be Category A students.

Federal impact aid compensation to Duval Public Schools for the 1993–1994 school year was $1,964,908.92 (based on figures submitted to DOE by the Duval County School District during the 1992–1993 school year). Of this total, $1,575,754.67 represented Category A payment, and $326,547.10 represented Category B payment (DOE, 1994b).

Approximately 16,000 Duval County students are in private schools that serve elementary to high school age students, including religious and independently owned and operated educational facilities (Jacksonville Business Journal, 1994). Vocational education is also offered, providing job preparatory programs in the fields of agriculture, business, health occupations, home economics, industrial, marketing, public service, and technical education (White Publishing Company, 1994). Jacksonville has seven colleges and universities, with a combined enrollment of more than 30,000 students. These include the University of North Florida, Jacksonville University, Florida Community College, and Flagler College (White Publishing Company, 1994).

3.3.11.1.2 NAVSTA Mayport Dependents

Dependents of military personnel residing in on-base housing and in Ribault Village, one mile south of NAVSTA Mayport, attend elementary and secondary schools in the Mayport and the Beaches areas. Table 3-11A lists the enrollment and capacity of these schools, and number of military students living on and off-base. Eight elementary schools, two middle schools, and one senior high school serve NAVSTA Mayport. The assumption can be made that, because of the distant location of the two other military bases in Jacksonville, the Category A students attending these schools are dependents of military personnel living at NAVSTA Mayport or Ribault Village. Overall, the number of military dependents (Category A and B) attending these schools total 1,919, or 20.7 percent, of the total enrollment. Military enrollment (Category A and B) percentages range from a low of 3 percent at Fletcher Senior High to a high of 54 percent at Mayport Elementary.

Table 3-11B lists the 1994–1995 enrollment, capacity, and number of military students in the six schools in the area surrounding the Johnson Navy Family Housing in Jacksonville. Four elementary schools, a middle school, and a high school are near this housing community. The Category A military students in these schools are not dependents of military personnel living at Johnson Navy Family Housing, which is privately owned rental property. Students from Johnson Navy Family Housing would be among the Category B students. Military students total 910, or 9.5 percent of the overall enrollment of these schools. Within individual schools, military enrollment percentages range from a low of 3 percent at Sandalwood High School to a high of 18 percent at Alimacani Elementary.

TABLE 3-11A 1994–1995 ENROLLMENT, CAPACITY, AND MILITARY DEPENDENT DATA FOR NAVSTA MAYPORT AREA SCHOOLS

	Mayport Central Elementary	Jacksonville Beach Elementary	Seabreeze Elementary	San Pablo Elementary	Finegan Elementary	Atlantic Beach Elementary	Neptune Beach Elementary	Mayport Middle	Fletcher Middle	Fletcher Senior High	Total
Student enrollment	983	434	569	777	645	482	1,103	1,037	1,276	1,945	
Capacity	1,064	487	538	663	793	595	1,281	1,100	580	2,017	
Military students	527	55	40	49	519	48	160	398	58	65	1,919
Category A	270	30	0	20	418	4	20	210	1	26	999
Category A—percent of enrollment	27.47%	6.91%	0.00%	2.57%	64.81%	0.83%	1.81%	20.25%	0.08%	1.34%	
Category B	257	25	40	29	101	44	140	188	57	39	920
Category B—percent of enrollment	26.14%	5.76%	7.03%	3.73%	15.66%	9.13%	12.69%	18.13%	4.47%	2.01%	

Source: Adams 1994.

Note: 1994–1995 enrollment figures were gathered 9/9/94 (10 days into the school year).

TABLE 3-11B 1994–1995 ENROLLMENT, CAPACITY, AND MILITARY DEPENDENT DATA FOR JOHNSON FAMILY-HOUSING AREA SCHOOLS

	Alimacani Elementary	Sabal Palm Elementary	Lone Star Elementary	Brookview Elementary	Landmark Middle School	Sandalwood High School	Total
Student Enrollment	1,588	1,616	844	961	2,142	2,447	
Capacity	1,191	1,260	675	747	1,876	2,581	
Military Students	279	265	86	82	115	83	910
Category A	7	6	0	1	2	0	16
Category B	272	259	86	81	113	83	894
Percent of Enrollment	17.56	16.39	10.18	8.53	5.36	3.39	

Source: Adams 1994.

Note: 1994–1995 enrollment figures were gathered 9/9/94 (10 days into the school year).

3.3.11.2 Medical Facilities

A number of medical treatment facilities are available to residents in the Jacksonville area, including the Mayo Clinic and Nemours Children's Clinic. Twelve acute care hospitals, one psychiatric hospital, and twelve municipally operated hospitals are in the area. In 1992, Duval County had a ratio of 1 physician per 365 persons. Hospitals in Duval County had a total of 2,635 beds in 1992, or 1 bed for every 255 citizens (White Publishing Company, 1994).

Medical services for NAVSTA Mayport are provided through a 23,103-square-foot branch medical clinic of the Naval Hospital located at NAS Jacksonville (NAVSTA Mayport PAO, 1993). The medical clinic, which has a staff of 109 military and civilian personnel, provides outpatient services to active duty and retired military personnel and their dependents who reside within a forty-mile radius. Patients requiring inpatient care are transported to either the Naval Hospital at NAS Jacksonville or civilian hospitals in the area. NAVSTA Mayport has no plans to provide inpatient care facilities.

A 4,600-square-foot dental clinic, with a staff of 27 personnel, provides dental services at the naval station for active duty and retired military personnel and their dependents residing within the forty-mile service radius.

3.3.11.3 Recreation

Recreational and entertainment amenities of the City of Jacksonville include sporting events, museums, musical entertainment, theater, festivals and shops on the waterfront, historical sites, and parks. Kathryn Abbey Hanna Park, 450 acres in size, is the major recreational facility in the NAVSTA Mayport area.

Recreational facilities at NAVSTA Mayport are available for station employees. These facilities include an 18-hole golf course with a golf pro shop; a beach along a 1.14 mile oceanfront; a one-mile nature/fitness trail with 20 exercise stations; nine ball parks for softball, football, soccer, and little league; a 50-meter olympic-size swimming pool; 11 tennis courts and a pro shop; a full basketball, racquetball, and weight-training gymnasium; a 440-yard outdoor running track; a 48-lane bowling alley; a 65-foot-long charter boat; a community and youth activities center; three clubs; and two picnic areas.

3.3.11.4 Childcare

Childcare for NAVSTA Mayport personnel is provided in two buildings where 75 childcare workers care for a total of 325 children (NAVSTA Mayport, 1994). A waiting list usually carries 10–55 names at a time; the majority requesting infant care. The child development program, which is nationally accredited, provides learning activities appropriate to each age group. The childcare service area includes active-duty, area retirees, and DOD civilian personnel, with priority given to active-duty personnel.

In addition to the childcare centers, 42 home-care providers currently care for approximately 458 children of naval or DOD personnel (NAVSTA Mayport, 1994f). The average time on the waiting list is 2-3 months. This list is filled mainly with infant care requests. Each family home care provider may keep up to six children, depending on their ages; hours are flexible and may include weekends. The bulk of providers are solicited at family housing orientation sessions, where child care options are discussed.

Family services are available on base from representatives of the American Red Cross, the American National Bank, the Navy Federal Credit Union and the Navy Relief Society. Family services are also provided through private firms operating at NAVSTA Mayport.

3.3.11.5 Public Safety

The City of Jacksonville has 53 fire stations, served by a total of 1,176 volunteer and full-time employees, yielding a ratio of 1.8 personnel per 1,000 citizens served. The current budget is $60 million (City of Jacksonville Fire/Emergency, 1994). In 1993, the department responded to 70,349 fire calls and 78,847 rescue calls. The average response time for all services is 4 minutes from any fire station in the city.

The fire department at NAVSTA Mayport handles all calls within the base area. The department includes 50 civilian personnel. Twenty members on each of two shifts provide 24-hour fire protection and emergency response coverage, 7 days a week. Five personnel operate the 24-hour/day communications center. The department has a total of four fire engines; two for structural fire response and two for airfield crash response (NAVSTA Mayport, 1994g).

Ribault Village fire emergencies go through the 911 system, and the City of Jacksonville is often first to respond; the NAVSTA Mayport fire department also responds. The City of Jacksonville responds to all calls from Johnson Navy Family Housing through the 911 system. However, reciprocating mutual agreements exist between the Navy and the Jacksonville, Neptune Beach, Jacksonville Beach, and Atlantic Beach fire departments (NAVSTA Mayport, 1994g).

Emergency Medical Services are provided to NAVSTA Mayport by an on-call unit of military corpsmen from the base medical branch. However, advanced life support may be requested from the City of Jacksonville. In addition, 70 percent of all NAVSTA Mayport firefighters are state-certified emergency medical technicians. As with fire services, the 911 system serves the Ribault Village and Johnson Navy Family Housing communities (NAVSTA Mayport, 1994g).

3.3.11.6 Law Enforcement

Law enforcement in Duval County is provided by the Florida State Highway Patrol and the City of Jacksonville Sheriff's Office. The Sheriff's Office has a total of 1,260 sworn personnel, a ratio of 1.8 per 1,000 citizens served. Each beach community has its own

law enforcement department. Jacksonville Beach has 54 full-time sworn officers, and Neptune Beach and Atlantic Beach have 17 and 24 sworn officers, respectively. The City of Jacksonville is divided into five law enforcement zones and 93 beats, all operating out of one station (City of Jacksonville Sheriff's Office, 1994).

The security department at NAVSTA Mayport has 20 military and 48 civilian personnel (NAVSTA Mayport, 1994c). With the loss of personnel has come a reduction of services, including a reduction of the hours of gate access, and a reduction of vehicle inspection station hours. The ships are also assuming responsibility for security at pier gates (NAVSTA Mayport, 1994h).

The Navy has no formal mutual aid agreements for law enforcement with the cities of Jacksonville, Jacksonville Beach, Atlantic Beach, or Neptune Beach. However, the informal working relationship is considered good (NAVSTA Mayport, 1994h).

Ribault Village, because of its proximity to NAVSTA Mayport, is patrolled by base police. Johnson Navy Family Housing is under the jurisdiction of the Sheriff's Office of the City of Jacksonville. Hiring of civilian guards to handle security for Johnson Navy Family Housing is under consideration (NAVSTA Mayport, 1994h).

The Navy and Duval County have separate emergency management plans in the event of natural disasters, but the plans are coordinated.

4.0 ENVIRONMENTAL CONSEQUENCES

4.0 ENVIRONMENTAL CONSEQUENCES

Impacts to the environment resulting from construction and operation of potential facilities at NAVSTA Mayport will be classified and addressed relative to their principle source of origin. These impacts will be detailed under three headings: Facility Construction, Facility Operation, and Dredging. Facility construction includes movement of materials, equipment, and personnel in the areas of potential construction. Facility operation includes the normal day-to-day operations expected to occur at NAVSTA Mayport to homeport and support a CVN. These activities also include aircraft carrier maintenance and mooring considerations. Dredging includes the impacts of initial dredging and maintenance dredging and disposal of dredged material from the deepening of the turning basin and entrance channel, which would be necessary for homeporting the CVN at NAVSTA Mayport.

4.1 DIRECT EFFECTS AND THEIR SIGNIFICANCE

Impacts of homeporting a Nimitz class aircraft carrier at NAVSTA Mayport are evaluated for the three berthing alternatives: Wharf C-2, Wharf F, and dual capability. Impacts from facility construction would be similar for each berthing alternative, because the potential construction areas for each alternative are located within existing industrial and disturbed areas. General operations and potential impacts of operations would be similar for any of the berthing alternatives, because the aircraft carrier and support facilities would be comparable for each. Disposal of dredged material associated with each berthing alternative would be at the ODMDS. Upland disposal of dredged material would be necessary only if dredged material was not suitable for offshore disposal. Consequences of construction and operation of facilities, dredging, and dredged material disposal, are evaluated for physical, biological, and socioeconomic resources.

4.1.1 Physical Resources

4.1.1.1 Earth Resources

4.1.1.1.1 Physiography, Topography, and Bathymetry

Facility Construction. Topography would be slightly modified by filling and grading of the potential project sites. Potential project sites are located on previously developed land. The depot-level maintenance facility for berthing Alternative 1 would replace an existing parking lot directly north of Wharf C-2. The depot-level maintenance facility for berthing Alternatives 2 and 3 would replace a fleet parking lot south of Wharf F and north of the existing ship intermediate maintenance facility (SIMA). New parking lots would be constructed where the current laydown area is located. These two alternatives would also alter the topography along the waterfront area east of Wharf F with the construction of a three-acre stormwater retention area.

Facility Operation. No impact to topography at NAVSTA Mayport would result from operation and maintenance of facilities associated with the potential homeporting.

Dredging. Impacts to bathymetry would result from the deepening of the NAVSTA Mayport entrance channel and turning basin, from approximately 42 to 50 feet below mllw, plus two foot overdepth dredging (Figure 2-2). Approximately 16.7 million square feet would be dredged, producing approximately 5.7 million cubic yards (MCY) of dredged material (USAE, 1994). Periodic maintenance dredging around the berthing wharves and entrance channel would continue to maintain required depths. Deepening of the entrance channel may increase harbor sedimentation; rates have not been determined (NAVSTA Mayport, updated).

4.1.1.1.2 Soils and Geology

Facility Construction. The soils at NAVSTA Mayport are highly permeable and tend to be low in organic content and available water. The depot-level maintenance facility for berthing Alternative 1 would be located on Albany fine sand. The depot-level maintenance facility for berthing Alternatives 2 and 3 would be located on Aquic Quartzipsamments. Earth moving operations during construction would cause the different soil layers to mix, slightly altering the soil structure. The Albany fine sand would be reworked. Potential construction activities may temporarily cause local increases in soil erosion. These short-term erosion problems would be minimized by implementing proper site drainage plans and erosion protection techniques during the construction period, as described by the Stormwater Pollution Prevention Plan (SWPPP), designed in accordance with 40 CFR 122. Since construction would affect more than five acres, a National Pollutant Discharge Elimination System (NPDES) permit would be required.

Facility Operation. No long-term impacts to the soil at NAVSTA Mayport would be expected as a result of the normal operation of the homeporting facilities.

Dredging. Soils should not be affected during dredging since the dredged material would be disposed offshore.

Seismicity

No impact to the seismicity of the area would result from the potential homeporting project. The carrier and the maintenance facility could be affected by random seismic activity although documentation of seismic activity has been below 4.0 on the Richter scale. The facility would be designed to meet local building codes.

4.1.1.2 Air Resources

Naval facilities are required to comply with all applicable substantive and administrative requirements for air pollution control including criteria of the Clean Air Act (CAA) and 1990 Amendments, SIP, New Source Performance Standards, and

Prevention of Significant Deterioration requirements. The 1993 General Conformity Rule requires that all federal entities or actions demonstrate conformity to the applicable SIP. Because Duval County is a maintenance area for ozone, the total of direct and indirect emissions of NOx and VOC must each be below the *de minimis* levels of 100 tons/yr. No other emissions analysis is required because Duval County is in attainment or unclassified for all other federal criteria pollutants.

4.1.1.2.1 Construction-Related Emissions

The proposed action includes structural modifications to Wharf C-2, construction of 245,000 sf of maintenance facilities, site improvements, and utilities upgrades. Other construction-related emissions would be vehicular emissions from construction personnel. The construction personnel vehicle emissions were not included in this analysis, because it was assumed that construction personnel currently live in the Jacksonville area and are contributing to the existing daily emissions in the maintenance area. Types of construction equipment and vehicles that would be used include backhoes, bulldozers, cranes, forklifts, graders, and other heavy diesel equipment and trucks. Estimates of emissions for the construction phase were based on projected construction equipment, hours of operation, and horsepower (hp) of the equipment. Emission factors were based on AP-42 emission factors published by EPA (EPA, 1995). The time period evaluated was a one year period when all of the construction projects may be occurring simultaneously. The sequence of construction may vary, and therefore, to simplify the evaluation, it was assumed that although more than one of each type of equipment may be used at a time, the total use for the year would be the same (3000 hours) for each type of equipment. Table 4-1 shows the emission factors and calculations of emissions for construction activities. Emissions during the year evaluated are estimated to be 33.5 tons NOx and 3.2 tons VOC.

4.1.1.2.2 Dredging-Related Emissions

Emissions from dredging and dredged material disposal would be from sources including dredges, tugs, and survey boats. Channel dredging would take approximately 12 months, and would utilize a hopper dredge and survey boat. Turning basin dredging would last approximately eight months, and would utilize a clamshell dredge, tender tug, survey boat, and towing tug. Since the sequence of dredging has not been determined, it is assumed that in one year the channel dredging will take place, and in the second year the basin dredging will occur. Two methods of estimating emissions were used. The first one utilizes AP-42 emission factors. The second method utilizes emission factors for commercial marine vessels, which were developed from AP-42 factors (EPA, 1991). Other assumptions include the following.

1. The clamshell dredge is 1,000 hp, and operates at full power for 6240 hours per year.
2. The hopper dredge is 5,000 hp, and operates at full power for 520 hours per month.
3. The tender tug is 800 hp, and operates at slow speed for 520 hours per month.

TABLE 4-1 CONSTRUCTION-RELATED EMISSIONS

Equipment	hp	hours	Emission Factors NOx g/hp-hr	Emission Factors VOC g/hp-hr	Annual Emissions NOx tons	Annual Emissions VOC tons
Backhoe	65	3000	8.81	0.97	3.4	0.4
Bulldozer	150	3000	7.81	0.75	6.9	0.7
Crane	100	3000	11.01	1.01	6.5	0.6
Forklift	65	3000	8.81	0.97	3.4	0.4
Grader	100	3000	7.14	0.36	4.2	0.2
Cherry Picker	50	3000	8.81	0.97	2.6	0.3
Front-end loader	75	3000	8.81	0.97	3.9	0.4
Air compressor	40	3000	11.01	1.01	2.6	0.2
					33.5	3.2

g/hp-hr = grams/horsepower-hour

4. The survey boat is 650 hp, and operates at slow speed for 20 hours per month.
5. The towing tug is 3,600 hp, and operates at cruise speed for 520 hours per month.

Table 4-2 summarizes the estimated dredging and dredged material disposal emissions. The estimated maximum annual emissions calculated with Method 1 are 376.3 tons NOx and 24.6 tons VOC for the channel dredging. The estimated maximum annual emissions for Method 2 are 366.7 tons NO_x and 19.9 tons VOC, also for channel dredging.

4.1.1.2.3 Operations-Related Emissions

Operations emissions may result from maintenance facilities, carrier emissions, and vehicular emissions from personnel associated with the facilities and carrier. These emissions would occur after all facilities are operational, when a CVN is in port for maintenance. Vehicular emissions would primarily be from employees travelling to and from NAVSTA Mayport.

Maintenance Facilities - Potential emissions sources include operations in the DMF, such as brazing and welding operations, paint and abrasive blast operations, fiberglass lagging operations, and surface coating solvent operations. Emissions from these operations mainly consist of particulates and VOCs. Brazing and welding are also minor sources of combustion emissions such as NOx and CO. Paint and abrasive blast operations will be regulated by FDEP, and will most likely require installation of filters to control particulate emissions. Lagging operations may emit particulates, and a high efficiency particulate air (HEPA) filter system will be installed. Other propulsion plant maintenance activities may produce other particulate emissions. On December 15, 1995, the EPA issued national emission standards for hazardous air pollutants (NESHAP) under Section 112 of the CAA, as amended, for shipbuilding and ship repair (surface coating) operations. The NESHAP requires existing and new major sources to control emissions using the maximum achievable control technology to control hazardous air pollutants. Pollutants covered by the rule include xylene, toluene, ethylbenzene, methyl ethyl ketone, ethylene glycol, and glycol ethers. Major source facilities are restricted from applying some marine coatings, and must implement the work practices required in the rule. If the potential maintenance facility is considered a major source, Navy would need to comply with this new CAA requirement.

The operations that would be the main source of VOC emissions include surface coating operations and solvent use. VOC emissions from paint booth operations would be regulated by FDEP. The VOC emissions from surface coating operations and solvent use are expected to be below 25 tons per year (U.S. Navy, 1995a).

Vessel Emissions - Equipment on the CVN that may generate emissions include emergency diesel generators, aircraft/support equipment, and forklift equipment. The aircraft/support equipment is not typically used in port, and the forklift equipment is

TABLE 4-2 DREDGING-RELATED EMISSIONS

METHOD 1

	hours	Emission Factors NOx lb/hr	Emission Factors VOC lb/hr	Annual Emissions NOx tons	Annual Emissions VOC tons
Channel Dredging					
Hopper dredge	6240	120.0	7.5	374.4	23.4
Survey boat	240	15.6	9.7435	1.9	1.2
				376.3	24.6
Basin Dredging					
Clamshell dredge	4160	24.0	1.499	49.9	3.1
Tender tug	4160	19.2	1.1992	39.9	2.5
Towing tug	4160	86.4	5.3964	179.7	11.2
Survey boat	160	15.6	9.7435	1.2	0.8
				270.8	17.6

METHOD 2

	Fuel use 1000 gal/mo	Fuel use 1000 gal/yr	NOx Emission factor lbs/1000 gal	NOx tons/yr	VOC Emission factor* lbs/1000 gal	VOC tons/yr
Channel Dredging - 12 mos.						
Hopper dredge	150	1800	399.6	359.6	21.3	19.2
Survey boat	7	84	167.2	7.0	16.9	0.7
				366.7		19.9
Basin Dredging - 8 mos.						
Clamshell dredge	32	256	300.0	38.4	24.0	3.1
Tender tug	12	96	167.2	8.0	16.8	0.8
Survey boat	7	56	167.2	4.7	16.8	0.5
Towing tug	100	800	391.7	156.7	16.8	6.7
				207.8		11.1

*based on emission factor for HC

currently used on the CV, resulting in no increase in emissions. Emergency diesel generators are usually in standby mode for generating power when necessary, but they are run briefly once a week for reliability testing. The generators on the CVN are larger than for the CV, and would produce an increase of approximately 4.75 tons NO_x and 0.05 tons VOC per year (U.S. Navy, 1995a).

Shipboard Maintenance - Shipboard maintenance operations includes painting and abrasive blasting conducted while ships are in port. These activities are currently performed on the CV, and no increase in emissions is expected.

Vehicular Emissions - Vehicles directly associated with the maintenance facilities and CVN would be from the additional 1,102 personnel. Assumptions are: the commute averages 20 miles round trip, there are 1.2 riders per vehicle, and they will commute during the six month maintenance availability (approximately 130 workdays). Based on the 1996 Duval County MOBILE 5a average emission factors for all eight classes of motor vehicles, the annual emissions would be 11.75 tons NO_x and 13.40 tons VOC.

4.1.1.2.4 Emissions Summary

A summary of the estimated annual emissions for the construction/dredging and operational phases of the project is presented in Table 4-3. The estimates show that annual operations emissions are below the *de minimis* levels of 100 tons/yr for both NOx and VOC. The annual dredging and dredged material disposal emissions are expected to be above the *de minimis* level of 100 tons/yr for NO_x, and a conformity determination would be required if Duval County is still a maintenance area at the time dredging is proposed. The construction activities would not produce annual emissions above the *de minimis* levels for NO_x or VOC, but would be included in a conformity determination if the activities occurred concurrently with dredging activities.

4.1.1.3 Noise

Navy's Environmental and Natural Resources Program Manual, OPNAVINST 5090.1B, Chapter 17, set the noise abatement standards and guidelines by which the potential homeport project would be operated. Onshore and shipboard activities are addressed. Federal facilities are directed "...to comply with all requirements, substantive or procedural, applicable to environmental noise abatement." All applicable federal requirements pursuant to local laws are also included. Ship procedures direct "The use of powered tools, machinery, outboard loudspeaker, or any other devices which emit excessive noise, either directly, or indirectly through remediation, shall be restricted to normal daylight working hours to the maximum possible extent."

Facility Construction. Construction activities would have a temporary effect on ambient noise levels near the potential construction sites. Construction would include earth moving operations, construction of support facilities, and wharf reinforcements. The operation of heavy construction equipment may generate noise levels that range from 65 to 105 dBA at 50 feet from the source. These noise levels would be compatible

TABLE 4-3 SUMMARY OF ESTIMATED EMISSIONS

	NOx tons/yr	VOC tons/yr
De minimus **level**	100	100
Construction and Dredging-Related Emissions		
Method 1		
Construction	33.5	3.2
Dredging	376.3	24.6
Total	409.8	27.8
Method 2		
Construction	33.5	3.2
Dredging	366.7	19.9
Total	400.2	23.1
Operations-Related Emissions		
Maintenance Facilities	0.00	25.00
Vessel Emissions	4.75	0.05
Vehicular Emissions	11.75	13.40
Total	16.50	38.45

with existing noise levels of the industrial area. Most construction would be conducted during normal working hours in an effort to minimize adverse affects.

Facility Operation. Minimal sound level increases would result from the operations related to the potential homeporting. The operation of the carrier and its maintenance facilities would make the largest contribution to sound levels, and would be consistent with noise generated from similar activities in the turning basin and ship support area. In addition, noise would be caused by increases in vehicle traffic. Aircraft assigned to the carrier would depart from and land on the carrier offshore, and would not cause noise impacts in the Mayport area.

Dredging. Noise from initial and maintenance dredging would not impact residents on shore due to separation from the source. Generally, there is a six A-weighted decibel (dBA) decrease in noise level for each doubling-of-distance from the source.

4.1.1.4 Water Resources

Facility Construction. During facility construction, surface soils would be exposed thereby increasing the potential for erosion and water quality impacts. Stormwater management measures will minimize sedimentation in local waters during construction.

No significant increase in runoff would result from the potential action since most of the potential construction would take place on previously developed sites. A slight increase in stormwater runoff would be caused by increased development.

Facility Operation. Ship discharges and stormwater runoff would potentially impact marine waters. Ship discharges are composed of black water, gray water, bilge water, brine, and thermal discharges (Table 4-4). Black water is comprised of sewage. Gray water is the water from the showers, sinks, and other sources which do not contain sewage. Approximately 160,000 gallons per day (GPD) would be discharged to shore sanitary facilities while pierside. This is an approximately 5,000 GPD more than a CV. The CVN generates an average of 107,000 GPD of black water while at sea. Navy policy states that this sewage is not to be discharged within three nautical miles from shore. Black water is discharged at sea, held up to 12-hours while travelling from sea to port, and is discharged to shore sanitary facilities while pierside. Operations generate approximately 194,500 GPD of bilge water composed of water used in steam operations and "cold iron". Cold iron describes the condition of a ship when all shipboard boilers, engines, and generators are inoperative during repairs and can furnish none of the required ships services.

When fully operational, the MSF, SMF, and CIF will require water and sewerage capacity in the amounts 11,000 gallons per day, 12,000 gallons per day and 4,000 gallons per day, respectively. Water and sewerage requirements and discharges would be handled by existing onshore sanitary facilities.

TABLE 4-4 UTILITY REQUIREMENTS FOR THE NIMITZ CLASS AIRCRAFT CARRIER

ON-BOARD PERSONNEL LOADINGS	
Nimitz Class Carrier (Persons)	3,217
UTILITY REQUIREMENTS FOR NIMITZ CLASS CARRIER	
Potable Water Demand, Gallons per Day	185,000
Graywater Production, Gallons per Day	97,000
Blackwater Production, Gallons per Day	64,000
Solid Waste Generation, Pounds per Day	11,900
Electrical Shore Power, Volts	4,160
Steam, Pounds per Hour	7,000

Note: Graywater production based on an average rate of 30 gpcd
Blackwater production based on an average rate of 20 gpcd
Solid waste production based on an average rate of 3.69 lb/capita/day
Utility requirements assume 60 percent of crew on ship (average)

Source: SOUTHDIV, 1994.

Stormwater runoff from additional parking areas on base could contain lead, oil, and grease, which could contaminate stormwater runoff. Berthing Alternatives 2 and 3 include construction of a stormwater retention pond near Wharf F. This pond would provide retention for stormwater runoff increases and may also reduce potential pollution from existing stormwater runoff sources.

Dredging. Dredging will be conducted in accordance with permit specifications provided by USAE, FDEP, and the EPA. Since the sediment was determined not to contain levels of chemical contaminants above regulatory levels of concern, there would be no impacts relating to the remobilization and redistribution of chemical contaminants in this sediment (USAE, 1994a). A sedimentation study of the NAVSTA Mayport turning basin determined that deepening of the entrance channel would exacerbate harbor sedimentation [Naval Facilities Engineering Command (NAVFACENGCOM), n.d.]. The study did not quantify the anticipated increase, but proposed that advanced maintenance dredging in the basin might offset the effect of channel deepening. Further study was recommended.

The potential dredging area in the NAVSTA Mayport entrance channel and the Jacksonville Harbor Bar Cuts (see Figure 2-2) is east of designated Outstanding Florida Waters, and is approximately 500 feet away at the closest point of the entrance channel. Dredging may cause minor turbidity impacts, and these impacts would be addressed during permitting.

The dredging may have long term effects on salinity due to the increase in depth. During the dredging process several different operations occur which result in disturbance and resuspension of the bottom shoal material. Dredging causes agitation of the sediments. The hopper dredge disrupts the bottom sediments when it passes through shoal material. The clamshell dredge disturbs and resuspends bottom material as the bucket bites into the sediment and breaks free when being hoisted. At the sediment-water interface, a fluff similar to that occurring during storm conditions or periods of high sediment transport is generated. The fluff is maintained about one week after dredging and continues within the confines of the channel for a few weeks beyond termination of the dredging operation (Sustar et al., 1976).

Sediments settle in the form of a cloud during disposal of dredged material offshore. Currents affect the transport of any turbidity cloud that may be generated during dredged material disposal. The currents carry sediments as far as several thousand meters. Dredging and dredged material disposal operations have very little effect on the upper water column. Increases in solids concentrations typically do not exceed levels occurring during storm periods.

4.1.1.5 Cultural Resources

Construction of facilities is not proposed in the area of any known cultural resources at NAVSTA Mayport or in the Mayport area. Dredging in the turning basin is not expected to encounter any submerged cultural resources. If historic or archeological

resources are discovered during construction or dredging, the activity would be stopped pending further investigation. Operation of potential facilities is not expected to impact cultural resources.

4.1.2 Biological Resources

4.1.2.1 Terrestrial Systems

The terrestrial systems at NAVSTA Mayport would potentially encounter only minimal adverse impacts related to the construction and operations of a CVN. The construction and operations would be performed at and in the vicinity of the NAVSTA Mayport turning basin and waterfront which is already developed. Impacts to terrestrial systems related to the potential homeporting would involve elevated noise levels, increased human activity, clearing of approximately four acres of existing landscaped vegetation that may involve some habitat loss, and an increase in the potential for spills or releases. These impacts would cause terrestrial animals to temporarily or permanently relocate. There are hundreds of acres of available habitat with proportional value within the vicinity of the potential action. There would be minimal to no impacts to terrestrial systems during dredging operations. Disposal of dredged material may be at the ODMDS; therefore, terrestrial systems would not be affected. However, there is the potential for upland dredged material disposal at two existing dredged material disposal sites located at NAVSTA Mayport. These sites are presently at capacity, although they may be emptied and the material relocated so that the sites could be used for maintenance dredged material disposal. Impacts to these sites would be minimal since they have previously been used. If any new dredged material disposal sites are proposed, a biological assessment of threatened and endangered species would be completed prior to use.

4.1.2.1.1 Terrestrial Vegetation

Facility Construction. Less than four acres of existing landscaped vegetation and no wooded area would be directly impacted by facilities construction (Figure 3-5). Facility construction would be predominantly within developed areas at NAVSTA Mayport. The vegetation within the developed area consists of landscaped grasses and a few trees. Vegetation would be cleared only as necessitated by facility construction and operations. Open areas of the site would be landscaped and revegetated following construction activities. Natural vegetation, ornamental and introduced grasses, trees, and shrubs would be used for landscaping. Impacts would include the elimination of potential foraging. Also, nesting habitat for wildlife in vegetated portions of the site would decrease due to further development and increased human activity.

Facility Operation. Normal operation and maintenance of facilities may impact vegetation. Periodic mowing, pruning, and other maintenance would preserve the aesthetic quality of the landscaped areas; however, the value of the landscaped areas for wildlife habitat would most likely be degraded due to the continued high level of

human activity. Since the area is already developed, wildlife activity and vegetation have adapted to human activity and urbanization.

Dredging. No terrestrial vegetation would be impacted by dredging operations since all required dredging would be within the NAVSTA Mayport turning basin and entrance channels. The preferred dredged material disposal site is the ODMDS. The upland dredged material disposal sites at NAVSTA Mayport may be emptied so that the sites can be used for future disposal of maintenance dredged material. If these sites are used in the future, impacts would be minimal since the sites have previously been used. Disposal operations have previously degraded habitat at these upland disposal sites.

4.1.2.1.2 Inland Wetlands

Facility Construction. Facility construction would be in the vicinity of the waterfront located on the northeast section of the station. No impacts to inland wetlands related to construction would occur. A detention pond would retain runoff so that possible contaminants would not impact wetlands. Site construction would comply with regulations for NPDES permits.

Facility Operation. Normal operation and maintenance of facilities would not impact inland wetlands. The majority of repair work would be performed within the repair facility. The effects of accidental spills or releases at the waterfront would be minimized by contingency plans and construction of a site drainage system that would direct spills and runoff away from natural systems. Spills and releases at the waterfront would not be anticipated to impact inland wetlands.

Dredging. The NAVSTA Mayport turning basin and entrance channel are several hundred yards from the closest inland wetland area. Dredging activities would not directly affect inland wetlands. If the inland disposal sites are emptied and used for future maintenance dredged material disposal, drainage systems would mitigate potential runoff impacts.

4.1.2.1.3 Birds

Facility Construction. Construction activities, associated noise, and minor habitat loss would disturb birds in the surrounding area of construction and result in their temporary and possibly permanent displacement. Construction activities would result in some habitat destruction mainly planted grasses; however, there are many acres of available habitat of proportional value within the vicinity. The birds could find refuge within the Timucuan Ecological Preserve which is north of NAVSTA Mayport (Figure 2-7). Construction activity during the winter months could also cause migrant bird species to relocate to nearby habitat preserves. Loss of bird habitat would be minimal since most of the facilities would be constructed in previously cleared and developed areas where avian species are sparse. Only a few scattered trees would be cleared, as necessitated by facility construction.

Facility Operation. Operation and maintenance of a CVN would not affect birds in the region. Many bird inhabitants at NAVSTA Mayport are tolerant of human activity; therefore, bird species would avoid the area during activities such as mowing, pruning, and maintenance and return when activity returns to normal levels. The facilities would be constructed so that noise levels would be retained at acceptable levels.

Dredging. Birds within the immediate area of dredging and dredged material disposal would temporarily be disturbed due to elevated noise levels and human activity. Sight feeders such as gulls and terns may be hindered by increased turbidity in the immediate area of the proposed dredging, and would avoid the area. These birds should return after completion of the dredging activities when turbidity levels return to previous conditions. Beach habitat located south of the NAVSTA Mayport entrance channel may be disturbed by turbidity from dredging activities; however, this habitat is already degraded because of its placement adjacent to the entrance channel where activity is high.

4.1.2.1.4 Terrestrial Mammals

Facility Construction. New facilities and renovations would be constructed primarily within existing developed areas at the waterfront of the NAVSTA Mayport turning basin where mammals are not abundant due to the lack of available habitat. Less than four acres of existing landscaped vegetation would be cleared for facility construction. Habitat destruction impacts to mammals would be minimal. Most mammals would temporarily or permanently relocate to nearby areas during construction of the facilities to avoid the associated noise and activity. Mammals presently found in these areas are tolerant of human activity and would likely return after construction.

Facility Operation. Operation of facilities would not affect terrestrial mammals. None are expected to be in the area of the wharves or maintenance facilities.

Dredging. Terrestrial mammals would not be affected by dredging activities or dredged material disposal activities at the ODMDS.

4.1.2.1.5 Reptiles and Amphibians

Facility Construction. Most of the facilities would be constructed in previously developed areas, where approximately eight acres of landscaped vegetation are available for habitat. Very few, if any, reptiles or amphibians would be found within the developed northeast portion of the station. The majority of reptiles and amphibians inhabit the wetland hammocks, larger tree stands, and inland wetlands areas located on the south and southwest portion of the property. Reptiles and amphibians in the vicinity of the proposed construction would relocate temporarily or permanently to the adjacent habitat preserves.

Facility Operation. Effects of facility operation on reptiles and amphibians would be minimal. Construction activities would have already caused the majority of animals

to leave the immediate area and continual human activity could cause species to permanently relocate to surrounding, less active areas.

Dredging. Dredging and dredged material disposal should not affect reptiles and amphibians. The NAVSTA Mayport entrance channel and turning basin would likely be avoided by reptiles and amphibians because of the ongoing activity within the area.

4.1.2.2 Aquatic Systems

Extensive aquatic ecosystems almost entirely surround NAVSTA Mayport. Impacts to these aquatic systems would occur during construction, operational activities, and dredging and dredged material disposal. Wharf construction would result in minor impacts. Aquatic biological communities within the site vicinity may potentially be affected by thermal discharges from the aircraft carrier. Impacts resulting from dredging and dredged material disposal at the ODMDS may include temporary changes in water quality from increased turbidity, release of organic compounds and nutrients, and reduced dissolved oxygen. Loss of bottom material would affect bottom dwellers and feeders; however, these species are not abundant in the proposed dredge area. Burial of benthic organisms, fish eggs, and fish larvae could also occur, if they are present at the time of disposal.

Aquatic systems within the NAVSTA Mayport entrance channel and turning basin have previously been disturbed by industrial activities, such as, dredging, boat traffic, and carrier-related discharges. Due to the infrequency of many aquatic organisms within the NAVSTA Mayport turning basin impacts to aquatic species related to the aircraft carrier homeporting would be minimal.

4.1.2.2.1 Coastal Wetlands

Facility Construction. Facility construction may involve some wharf structural work within the NAVSTA Mayport turning basin. The potential construction area, for any of the berthing options chosen, is not located in proximity to coastal wetlands. The coastal wetlands are located on the AIWW along the southwestern side of the station; therefore, work done within the NAVSTA Mayport turning basin should not impact wetlands.

Facility Operation. Facility operations would not affect coastal wetlands. Coastal wetlands are located on the southwestern portion of the site along the AIWW while operational impacts would be contained within the NAVSTA Mayport turning basin, entrance channel and adjacent areas.

Dredging. Dredging and disposal would not affect coastal wetlands since they are located on the southwestern portion of the site along the AIWW.

4.1.2.2.2 Sea and Submerged Grasses

Facility Construction. The existence of sea and submerged grasses has not been formally documented in the vicinity of NAVSTA Mayport. Facility construction would have minimal to no impact on sea or submerged grasses due to their absence within the potential construction and dredging area.

Facility Operation. Facility operations would not impact sea or submerged grasses because of their infrequency of occurrence near the areas affected. Prior dredging and maintenance dredging have eliminated sea grasses from the NAVSTA Mayport area.

Dredging. Dredging and disposal would not impact sea or submerged grasses because of infrequency of their occurrence near the areas affected. The NAVSTA Mayport entrance channel and turning basin are maintenance dredged approximately every two years. Sea grasses do not grow in the area of the proposed dredging or at the ODMDS.

4.1.2.2.3 Plankton

Phytoplankton

Facility Construction. Structural work within the NAVSTA Mayport turning basin could impact phytoplankton. Construction activities would cause increased turbidity, reduced dissolved oxygen, an increased potential for spills or releases. Because of phytoplankton abundance in the summer, construction during June and July would have additional impacts. Impacts would be temporary and minimal since some species are able to withstand light deficiency, turbulence, and reduced nutrient and dissolved-oxygen levels. Phytoplankton impacts are expected to be localized and short-term.

Facility Operation. Operation of the CVN and maintenance facilities would not affect phytoplankton. Effects of berthing the aircraft carrier would be similar to past effects since it is a replacement carrier.

Dredging. Dredging operations associated with construction within the NAVSTA Mayport entrance channel and turning basin would cause increased turbulence and suspended solids, reduced dissolved oxygen, and nutrient releases into the water column. Excessive bound nutrients, including nitrogen and phosphorus, released into the water column could result in significant short-term increases in plankton. Phytoplankton densities are generally highest during the summer months; therefore, dredging during this period would force a large population to compete for resources. This could result in water quality problems such as lower dissolved-oxygen levels than induced directly by dredging. Dredging conducted during the fall, when phytoplankton densities are decreasing, would have less impacts.

Dredged material disposal at the ODMDS would have only minimal impacts to the phytoplankton standing crops because populations are generally lower offshore than nearshore.

Zooplankton

Facility Construction. Structural wharf work could cause impacts to zooplankton species within the turning basin because of increased turbulence, reduced nutrient, reduced dissolved oxygen, and increased suspended solids. Impacts to zooplankton would be temporary and minimal due to species characteristics enabling them to withstand turbulence, and reduced nutrient and dissolved-oxygen features. However, excessive suspended materials could cause gill clogging which would prove detrimental to zooplankton. Gill clogging impacts would be greater on planktonic larvae because they are more susceptible and fragile. Maximum concentrations of planktonic larvae generally occur during the spring; however, many larvae are also present in summer and fall. During these seasons increased suspended material could have additional impacts on planktonic larvae.

Facility Operation. Zooplankton would not be affected by CVN or maintenance facility operations.

Dredging. Dredging and dredged material disposal activities would cause impacts to zooplankton through increased turbulence, excessive suspended materials, and settling of solid materials. Again, suspended solids would cause gill clogging. Dredging operations could also impact fish larvae, if present in the immediate area. Settling of suspended sediments can impact the buoyancy of pelagic fish eggs and larvae. Fish, such as menhaden, groupers, anchovies, porgies and drums, with demersal eggs would be the most susceptible to increased turbidity. Dredging in March and April would have the greatest impacts since it is the most critical period for fish eggs and larvae to develop (CHESDIV, 1992).

Disposal at the ODMDS would have minimal impacts to zooplankton standing crops because populations are generally lower offshore than nearshore.

4.1.2.2.4 Benthos

Facility Construction. Structural wharf work within the NAVSTA Mayport turning basin would impact a small area of benthic species. The turning basin has previously been dredged and is industrially active, which has deterred benthic abundance and diversity.

Facility Operation. Operation of the CVN and maintenance facilities would not affect benthos. Benthic communities are characteristic of sand bottoms; however species abundance within the turning basin is low since it is dredged. Operations will not affect bottom dwellers.

Dredging. Dredging operations generally have the greatest impact on benthic organisms, both in the area to be dredged and at the dredged material disposal site. Since the proposed dredge depth would extend 10 feet deeper than the present channel depth (42 feet below mllw plus two feet overdepth), repopulation of dredged areas may be less diverse, consisting of the more tolerant, successor species. Repopulation would be limited by factors such as sediment type, season in which dredging is done, and availability of replacement populations. Repopulation would probably occur by opportunistic species from adjacent areas.

Disposal of dredged material at the ODMDS site would bury benthic organisms. The initial 5.7 MCY would be deposited in stages during approximately 18 months, and benthos repopulation would not occur until some time after. The abundance and type of benthic organisms at the ODMDS would change if the dredged material is different than the material most recently deposited at that time. Maintenance dredging material would primarily be silt and sand. This material, if deposited at the ODMDS site approximately every two years, may also change the density and composition of benthic species.

4.1.2.2.5 Shellfish

Facility Construction. Facility construction will not affect shellfish populations because of their infrequency of occurrence within the construction area.

Facility Operation. Facility operations would not affect shellfish because of their infrequency of occurrence in the operational area.

Dredging. Dredging would affect shellfish and other benthic species within the dredged area. Since the turning basin and entrance channels have previously been dredged, abundance and diversity of shellfish are extremely low. Disposal at the ODMDS would also have minimal impacts, since shellfish are not common at the disposal area. The dredging and disposal period would be temporary.

4.1.2.2.6 Fish

Facility Construction. Effects of construction would be minimal to fish. Because of their mobility these species would avoid areas adjacent to construction.

Facility Operation. Existing state and federal laws, and Navy regulations concerning implementation of stormwater, wastewater, and spill prevention plans would minimize impacts to fish.

Dredging. The impacts of turbidity and sediment suspension from dredging can be detrimental to finfish; however, mobility of fishes would allow them to avoid turbid areas during dredging operations, although some species may be affected before they can relocate. Suspended materials can cause gill clogging. Filter feeding finfish species, such as menhaden, would be most susceptible to impacts of dredging and

suspended materials. The excessive suspended material could clog the respiratory or feeding mechanisms. Juvenile fish have lower tolerance levels and less mature gills making them more susceptible to suspended material impacts than adults.

4.1.2.2.7 Sport and Commercial Fishing

Facility Construction. Construction operations would not impact sport or commercial fishing. The majority of work would be done at the waterfront in the NAVSTA Mayport turning basin where there is no sport or commercial fishing.

Facility Operation. Operations would not interfere with sport or commercial fishing activities. No impacts to sport and commercial fishing are anticipated.

Dredging. Dredging activities would have little impact on sport and commercial fishing since most of the area is within existing Navigational Prohibited Zones (NOAA, 1991). Impacts from dredged material disposal at the ODMDS would be minimal because commercial shrimpers avoid trawling near the ODMDS, shrimp are not common and the area is too far offshore.

4.1.2.2.8 Marine Mammals

Facility Construction. Construction of pier improvements would not impact any marine mammal species. Northern right whales and West Indian manatees are listed as endangered by both the federal government and the state of Florida. These species are discuss in Section 4.1.2.3. Bottlenose dolphins are agile and would avoid construction areas.

Facility Operation. Facility operations would not have adverse impacts on marine mammals at and in the vicinity of NAVSTA Mayport. Navy would post extra marine mammal lookouts on vessels transiting the area where marine mammals may be present. Marine mammals would avoid active areas.

Dredging. Dredging and disposal of dredged material at the ODMDS site would not impact marine mammals. Dredging operations including disposal of dredged material at the ODMDS would cause some marine mammal species to avoid the area during activities. Posted lookouts and moderate vessel speeds would minimize potential vessel/mammal accidents.

4.1.2.3 Threatened and Endangered Species

Facility Construction. Facility construction and operation would not adversely affect threatened and endangered species in the vicinity of NAVSTA Mayport. The facilities would be constructed in areas that are already developed and no beach or nesting habitat or critical habitat would be destroyed. Through both the support of right whales and manatee educational programs and implementation of aerial surveys and subsequent notification of vessels operating in the area, the potential for

vessel/mammal collisions has been reduced. Ships are routinely requested to reduce speed to the minimum necessary for safe navigation. Navy vessels also routinely use multiple lookouts while underway. Measures currently utilized at NAVSTA Mayport would protect manatees in the turning basin and entrance channel.

Facility Operation. Facility operation would not have adverse impacts to any threatened and endangered species. Operation of the aircraft carrier would be consistent with present activities within the NAVSTA Mayport turning basin and waterfront area. When the ship is deployed, it would travel through the right whale critical habitat area; however, other operations would take place outside of this area. Navy currently takes measures to prevent boat/manatee collisions. These mitigation measures involve propeller guards on small craft and awareness training for sighting and avoiding manatees. With these mitigation measures, the proposed operations are not anticipated to affect right whales or manatees. All dock workers and harbor pilots have been educated on how to recognize and avoid manatees should they appear in the basin. Manatee awareness signs are posted at regular intervals along the wharf. In the event that a manatee is sighted within the basin, all operations cease and no ships or boats will move until the manatee is out of the path. Other measures include use of "yokahama" fenders between all ships and barges moored in the turning basin. These fenders keep the vessels separated and prevent potential crushing of manatees. Four-foot diameter (minimum) foam-filled fenders are also used at wharfs. Sea tractors used for moving large ships into and out of berths are being equipped with "manatee guards" around the propellers. By the end of 1995, all sea tractors will be equipped with guards. Utility vessels also have manatee guards. These precautionary steps have been successful; there have been no known strikes in the basin since 1990 (U.S. Navy, 1995b).

Dredging. Dredging and disposal of the dredged material at the ODMDS is not anticipated to affect any threatened or endangered species. Navy operations are required to implement right whale safety precautions including extra lookouts and minimizing vessel traffic and speed. The presence of smaller vessels is not considered to be a significant factor in vessel collisions with right whales. The proposed action will result in a temporary small incremental increase in vessel traffic in the Mayport area and at the ODMDS. Vessels used for dredged material disposal will minimize speed and the small increase in traffic will not increase the probability of whale/vessel collision. The right whales will avoid areas of increased activity.

4.1.3 Socioeconomic Resources

4.1.3.1 Region of Influence

Replacing a Forestall class aircraft carrier with a CVN would not significantly alter the region of influence of NAVSTA Mayport. Short-term socioeconomic linkages between NAVSTA Mayport and the region would increase as a result of construction and other activities required to prepare the station to homeport a CVN. Replacing a CV with a CVN would have a small, but positive, long-term influence on economic activity,

income, and employment in the region. No significant adverse impacts to land use, housing, transportation, utilities, and community facilities and services would be expected because of the overall insignificant increase in carrier crew size.

4.1.3.2 Demographics

NAVSTA Mayport was a homeport for two Forestall class aircraft carriers, though only one has been homeported at NAVSTA Mayport recently. Replacing a CV with a CVN would result in negligible population-related impacts because the complements (personnel) of both carriers are similar. An average complement for a CVN without an airwing is 3,217 personnel, compared to an average complement without an airwing of 3,115 for a CV. Therefore, replacing a Forestall class carrier with a CVN would increase the ship population by 102 crew members.

Approximately 45 percent of the additional ship's personnel would have families, resulting in approximately 46 crew members having dependents (spouses and children). Assuming an average of 1.5 children per household, the increase in the number of children would be 69. The total additional carrier-related individuals (crew, spouses, and children) would be 217 persons. This small increase in population would be expected to be absorbed into the Jacksonville metropolitan area without significant impact to transportation facilities, utilities, or community services.

The number of maintenance personnel at NAVSTA Mayport would vary with the carrier maintenance schedule. Propulsion plant work associated with a CVN would result in an average increase of 1,000 personnel during the six-month maintenance availabilities, and fifty personnel during non-maintenance availability periods. It is not expected that these employees would bring spouses or dependents to the region for this short period of time.

Construction employment associated with the projects to support a CVN would be expected to be met from within the region and would not result in an increase in population to the area.

4.1.3.3 Economic Activity

Direct and indirect effects on economic activity in the Jacksonville MSA are anticipated. Direct effects would include an increase in employment and income in the region resulting from jobs and local procurement of goods and services during the construction of the proposed facilities, ongoing operation and maintenance activities once the carrier was homeported, and increased personal expenditures generated by ship-related employees and dependents. Indirect employment and income effects would result from the multiplier effect of direct expenditures for construction of facilities and income generated by the additional employment.

Preparation of NAVSTA Mayport to accommodate a CVN is estimated to cost $141.2 million and to take over seven years to complete. These costs include $100.6 million

for construction of maintenance facilities, dredging, and wharf improvements; $9.3 million for site improvements; and $31.3 million for collateral equipment.

Economic impacts generated from operation of a CVN would be similar to that of a Forestall class carrier. These include wages paid to ship- and shore-based military and civilian personnel, purchases and contracts related to supplying the ship, and contracts for periodic maintenance activities.

4.1.3.4 Employment

4.1.3.4.1 Construction-Related Employment

Construction of the facilities, excluding purchase of collateral equipment, would total $109.9 million in 1995 dollars. This includes $18.2 million for construction of the Ship Maintenance Facility, $10.7 million for the Maintenance Support Facility, and $27.6 million for the Controlled Industrial Facility. Site improvement Alternatives A, B, and C do not vary significantly in cost, totalling $9.307 million, 9.312 million, and 9.034 million dollars, respectively. Wharf improvements are projected to total $11.4 million, and dredging costs are projected to total $13.3 million. Construction activities are not expected to include any significant employment of workers from outside the region. Construction-related employment generated by construction of facilities, dredging, and site improvements would total approximately 850 jobs during the construction period, assuming labor costs were 30 percent of construction costs and construction labor accounted for two-thirds of this total. The overall project, from design through occupancy would extend over a 7-year time period. Peak construction employment would occur during the fourth year, with an average of 340 employees. The majority of construction would occur during the third, fourth, and fifth years.

4.1.3.4.2 Operation-Related Employment

Given the small difference (102 personnel) between the size of the crews of Forestall and Nimitz class aircraft carriers, the operations-related employment change would be minor. Maintenance personnel would vary with the carrier maintenance schedule. While the carrier undergoes maintenance, an average of 1,000 personnel would be employed. Personnel loading at the DMF would be less than 50 personnel during periods when CVN maintenance is not conducted. Indirect employment increases resulting from replacement of a CV with a CVN would not be significant given the small change in permanent military personnel.

4.1.3.5 Income

4.1.3.5.1 Construction-Related Income

The construction employment would result in increased income to the region during development of the project. Direct construction-related earnings are estimated to be $29.8 million dollars. The local multiplier value determined by the Jacksonville

Chamber of Commerce for the Navy is 2.15. When this value is applied to the direct income from construction employment, the total direct and indirect income related to the project would be $64.1 million dollars.

4.1.3.5.2 Operation-Related Income

Replacing a Forestall class aircraft carrier with a CVN would increase the ship-related personnel by only 102 persons, which would not result in a significant change in monthly salaries of $5.4 million.

4.1.3.6 Aesthetics

Aesthetics would not be significantly impacted by the homeporting of a Nimitz class aircraft carrier at NAVSTA Mayport. Homeporting of the carrier, and the construction projects required for homeporting, would not result in substantive changes to scenic views or visual attractiveness, nor would these activities decrease accessibility to views or attractive vistas in any of the areas where construction is planned. The potential construction/dredging activities and operations are similar to current activities at NAVSTA Mayport and in the commercial navigation channel, and would not affect aesthetics of natural or cultural areas. Development that would occur as part of the potential action would take place in existing industrial areas internal to NAVSTA Mayport.

4.1.3.7 Land Use

4.1.3.7.1 Off-Base Land Use

Homeporting a CVN and the accompanying development of facilities to support the carrier would have little direct impact on off-site land uses in the City of Jacksonville, since development would take place internally at NAVSTA Mayport. While the action would increase the intensity of on-site land uses, the type of land use at NAVSTA Mayport would not change.

4.1.3.7.2 On-Base Land Use

The Mayport Naval Complex Master Plan includes four principles that direct future development activities at the base. These are as follows:

- Allocation of land resources should be made on a priority basis.
- Use of all existing land areas at NAVSTA Mayport should be maximized within the limitations imposed by the environmental and operational constraints.
- Land use should be intensified at the base.
- Industrial-type activities should be separated from NAVSTA Mayport areas devoted to housing and community facilities.

The proposed development is consistent with these four principles. The proposed land uses are also consistent with the designations of the Master Plan for these areas, which call for direct ship support, indirect ship support, and industrial uses in the areas proposed for development. Consequently, no significant land use conflicts or impacts would occur relative to the Mayport Naval Complex Master Plan.

4.1.3.8 Housing

Jacksonville is a large and diverse metropolitan area that has the available labor pool to meet the construction labor requirements necessary for homeporting a CVN. In-migration of construction workers to the region is expected to be minimal, with the majority of the construction workforce expected to commute to NAVSTA Mayport from existing residences within the metropolitan area. No construction-related impacts to the housing market in the Jacksonville area should result from the proposed action.

An estimated 55 percent of the additional 102 carrier personnel (56 personnel) would be bachelors and would live aboard the carrier. This would result in no direct impacts to either on-base bachelor quarters at NAVSTA Mayport or off-base community housing resources.

The propulsion plant workforce would average 1,000 personnel during the six-month maintenance availability and 50 personnel during the nonmaintenance availability periods. These workers (and their dependents) are not expected to relocate to Jacksonville. Instead, monthly rental apartments, hotels and motels, and other short-term accommodations would absorb the workforce.

Replacement of a CV with a CVN would result in 46 personnel with families in-migrating from outside the region. Currently, on-base housing resources at NAVSTA Mayport are near full occupancy. A project to build 300 additional family housing units has been developed but has not received funding (NAVSTA Mayport 1994i). An additional 46 families seeking housing in one of the residential areas near NAVSTA Mayport would not result in a significant impact on housing resources in the Jacksonville area.

4.1.3.9 Utilities

NAVSTA Mayport is currently capable of homeporting conventionally-powered aircraft carriers at Wharfs C-1 and C-2, and Wharf F. To accommodate a CVN, pier utilities would have to be upgraded. Table 4-4 presents the utility requirements for the CVN. Specific pier requirements and impacts on existing utilities are described below. The basis for determining shore utility requirements is Military Handbook (MILHDBK) 1025/2, "Dockside Utilities for Ships".

4.1.3.9.1 Water Supply

Additional military personnel associated with the Nimitz class aircraft carrier that would live off-base would consist primarily of the married portion (approximately 46 households) of the ship's crew and approximately half (25) of the permanent DMF personnel. Any impacts to off-base potable water services would be negligible.

The existing potable water capacity at NAVSTA Mayport is 8.6 MGD with a current base demand of approximately 2.3 MGD, or 27 percent of the available capacity. The average potable water demand for a CVN is approximately 185,000 gallons per day (GPD), approximately 5,000 GPD higher than a CV. Wharf F would support this requirement, though Wharf C-2 would require $400,000 in improvements to provide additional connections (SOUTHDIV, 1995).

Based on a demand of 50 GPD per person, the fifty permanent personnel at the DMF would require approximately 2,500 GPD of potable water. During the six-month availability, the additional 1,000 temporary personnel would have approximately 27,000 GPD potable water demand.

The existing potable water supply capacity would easily meet the additional 32,000 GPD peak demand resulting from the carrier replacement and the additional permanent and temporary DMF personnel.

Saltwater service would be necessary at the carrier berth. Flow rates of 9,500 GPM for firefighting and 4,100 GPM for cooling/flushing at 150 psig would be required. The saltwater utility outlets at Wharf C-2 and Wharf F are adequate, but the existing facilities have been idle and are in poor condition. The estimated cost to repair the existing pumps to provide the required 9,500 gpm fire flow is $350,000 for each wharf (SOUTHDIV, 1995).

A pure water supply of 10,000 GPD is required while the carrier is berthed. Currently, no pure water is available at either Wharf C-2 or Wharf F. Pure water would be produced at the SMF and supplied by the SMF at Wharf F and from water trailers at Wharf C-2.

4.1.3.9.2 Wastewater Collection and Treatment

The existing sewage collection and treatment system at NAVSTA Mayport has a design capacity of 2.0 MGD. The base generates approximately 1.2 to 1.4 MGD. Aircraft carriers generate both domestic wastewater (graywater and blackwater) and industrial wastewater.

Graywater consists of water collected from the drains of showers, sinks, laundry, deck drains, the galley, and the scullery. The total production of graywater from the Nimitz class aircraft carrier while berthed would be approximately 97,000 GPD, approximately 3,000 GPD more than for the CV. The generation rate of graywater per person is

approximately 30 GPD. Navy policy states that graywater is to be discharged at sea when in transit and discharged to the DWTP while pierside.

Blackwater consists of human waste (sewage). The total generation of blackwater from the Nimitz class aircraft carrier while in port with crew would be approximately 64,000 GPD, approximately 2,000 GPD more than the CV. The average generation rate of blackwater per person is approximately 20 GPD. Sewage would be discharged to the DWTP while pierside.

Based on a generation rate of 50 GPD per person, the 50 permanent personnel at the DMF would produce approximately 2,500 GPD of domestic wastewater. During the six-month maintenance availability, the DMF would produce approximately 27,000 GPD. Sewage collection infrastructure would be provided during the construction of new facilities for the DMF.

The additional domestic wastewater generation rate resulting from the carrier replacement and additional permanent personnel would be approximately 7,500 GPD. During maintenance availabilities, the additional wastewater generation rate would increase to approximately 32,000 GPD. The existing DWTP has adequate capacity to handle this additional load.

Industrial wastewater would consist of bilgewater. Bilgewater production from the carrier while in port and in "cold iron" status is approximately 27,000 GPD; approximately one-half the quantity for a CV. Replacement of a CV with a CVN would have no impact on the existing OWTP since bilgewater loading would be reduced.

4.1.3.9.3 Solid and Hazardous Waste Management

The average generation rate of solid waste is 3.7 pounds per day for each person on the carrier. The content of the waste consists primarily of food, paper, plastic, glass, and wood. The estimated solid waste generation rate while the carrier is in port is approximately 11,900 pounds per day (lb/day). This amount is approximately 370 lb/day more than that generated by the existing CV, but it represents less than 1 percent of the total daily solid waste disposed at Trail Ridge Landfill. Collection and disposal of solid waste from the Nimitz class aircraft carrier should not adversely impact the operational performance or life expectancy of the Trail Ridge Landfill.

Hazardous Waste

The hazardous waste generated by the proposed homeporting of a CVN was estimated by Naval Station Norfolk where several carriers are homeported. Hazardous waste would be generated at approximately 15,000 pounds per year by the CVN (NAVSTA Mayport, 1996). This is approximately 25 percent of the current rate of 600,000 pounds per year for NAVSTA Mayport. The estimated quantity of hazardous waste generated by a CVN is approximately equivalent to that of a CV. NAVSTA Mayport currently uses only approximately 35 percent of the storage capacity of the Part B storage facility

(Melchiorre, 1994). The quantity varies monthly depending on the number of ships serviced.

NAVSTA Mayport areas that would be affected by the potential homeporting would primarily consist of Wharf C-2 and Wharf F. The closest SWMU to C-2 is a neutralization pond at a distance of approximately 1500 feet.

Wharf F is approximately 500 feet from four SWMUs: Jacksonville Shipyards, Atlantic Marine, North Florida Shipyards, and Landfill A. Berthing Alternatives 2 and 3 include a parking lot planned for the Jacksonville Shipyards Site. Groundwater samples taken in 1988 did not contain volatile organic chemicals (VOC's) or semi-volatile organic chemicals (SVOC), although traces of cadmium and lead were found, from 1.0 to 2.0 micrograms per liter and 26 to 122 microgram/liter respectively. The pesticide 4,4-DDE was also detected in groundwater samples at concentrations from 0.01 to 0.14 micrograms per liter. A RCRA Facility Investigation has just been completed for this site. Whether remedial action is required or not would depend on the results of additional sampling planned to be conducted in 1996. If contamination is found to be more extensive than previously believed, remedial goal options will be prepared to address the problem (NAVSTA Mayport, 1996).

4.1.3.9.4 Energy

The total design load requirement at Wharf F is estimated at 30,000 kilovolt-amps (KVA). The present 480-volt shore power facilities have a design capacity of approximately 7,500 KVA. Electrical utility modifications at Wharf F would include the expansion of the existing 480-volt shore power stations and installation of a 4160-volt shore power stations.

The total design load requirement at Wharf C-2 is estimated to be approximately 30,000-KVA. The present 480-volt shore power facilities have a design capacity of approximately 7,500 KVA (SOUTHDIV, 1995). At Wharf C-2, electrical utility modifications would include the expansion of the existing 480-volt shore power stations and installation of a 4160-volt shore power stations.

Upgrades to the Power Distribution Station located outside the NAVSTA Mayport main gate would be required and new 26.4 kV loop feeders would be installed to the substations. The maximum electric requirement for the DMF is 2,000 kVA. This is less than the existing 7,500 kVA capacity at the shore facilities. No constraints are expected in meeting the electrical requirements of the DMF. The JEA has agreed to a reduced rate for the increase in electrical consumption from the CVN and associated maintenance facilities (U.S. Navy, 1996a).

4.1.3.9.5 Steam

The CVN requires steam at a constant rate of 5,000 pounds per hour (lb/hr) and a maximum flow rate of 15,500 lb/hr (30°F outdoor temperature). The DMF also has a

minor steam requirement of approximately 2,200 MBTUs per year. The carrier replacement and the addition of the DMF are within the capacity of the existing steam plants at NAVSTA Mayport (U.S. Navy, 1995c).

4.1.3.9.6 Compressed Air

The compressed air requirement for a CVN is approximately 2,400 standard cubic feet per minute (scfm). Wharf F currently has adequate capacity, but lacks a required 4-inch utility outlet connection. Wharf C-2 has no system for delivering compressed air. The necessary upgrades would cost approximately $110,000 at Wharf F and $720,000 at Wharf C-2.

The total compressed air demand for the DMF would be approximately 3,000 scfm. The necessary infrastructure would be provided as part of the construction of the new facilities. The existing Compressed Air Plant (Building 391) may not have sufficient capacity to supply this additional amount, but the deficit can be met through upgrades or through the use of temporary mobile compressors during ship repair periods.

4.1.3.10 Transportation

NAVSTA Mayport has the capacity to homeport two permanently based, conventionally-powered aircraft carriers and approximately 40 surface combatant ships. However, recently only one CV has been homeported at NAVSTA Mayport. Replacement of a CV with a CVN would increase the number of personnel at NAVSTA Mayport because the CVN requires a slightly higher crew complement (102 more in-port crew members).

The number of maintenance personnel at NAVSTA Mayport would vary with the carrier maintenance schedule. The number of personnel at NAVSTA Mayport would be less than 50 when no CVN maintenance is being conducted but would increase to an average of 1,000 personnel per day for each six-month maintenance availability.

To determine the maximum traffic impacts associated with replacing a CV with a CVN, a conservative net increase of approximately 1,102 personnel, including 102 carrier-related personnel and maximum 1,000 DMF personnel, was assumed during carrier homeporting activities.

4.1.3.10.1 Trip Generation, Distribution, and Roadway Performance

Since the number of personnel at NAVSTA Mayport is expected to increase, the amount of traffic generated in the vicinity of NAVSTA Mayport is expected to increase. The replacement of a CV with a CVN would generate traffic only in terms of personnel trips to and from the base. The replacement is not expected to increase the number of deliveries and visitors to NAVSTA Mayport.

Published trip generation data in the Institute of Traffic Engineers Manual (ITE, 1991) indicates that the average weekday trip generation rate per employee at a military installation ranges from 1.00 to 4.18, with an average of 1.78. A conservative trip-ends per employee of 2.4 was used based on the assumption that approximately 20 percent of employees drive off-base once during the day. As reported in ITE, the average weekday trip generation rate during AM and PM peak-hour periods is 0.38 and 0.39, respectively. For trip generation purposes, a vehicle occupancy rate (VOR) of 1.30 was assumed.

Based on the above assumptions, an average net increase of approximately 2,034 average daily traffic (ADT) trips would be expected, with a increase of approximately 322 trips during the AM peak hour and 331 trips during the PM peak hour (Table 4-5). These traffic volume increases would exist only when the CVN is homeported for maintenance availability and would last for approximately six months. During nonmaintenance availabilities, the 50 maintenance personnel would generate 92 ADT trips.

Most street segments in the vicinity of NAVSTA Mayport are predicted to operate at acceptable LOS conditions. However, without mitigation measures, the additional personnel would cause an increase in traffic on several segments and intersections that currently operate below their adopted LOS standards.

Existing LOS on Atlantic Boulevard in the vicinity of Mayport Road is Level E with westward improvement in operating conditions to Levels B to D. Existing LOS on Mayport Road ranges from Level B at the intersection of Mayport Road and Wonderwood Road to Level F near Atlantic Boulevard. The potential net increase in vehicles trips would add to the congestion currently experienced during AM and PM peak hour periods at the main gate and at the intersection of Mayport Road and Atlantic Boulevard.

Traffic volume and circulation at NAVSTA Mayport would be expected to increase slightly because of the net difference in ship personnel between the two types of carriers. However, NAVSTA Mayport traffic conditions are not expected to be significantly impacted.

4.1.3.10.2 Base Access

It is expected that most vehicles associated with the CV would use the NAVSTA main gate. During six-month maintenance availability periods, additional personnel would contribute to traffic congestion at base access locations during peak hour periods.

4.1.3.10.3 Base Parking

To determine the total parking area associated with the maximum net increase in carrier personnel at NAVSTA Mayport, an average parking space surface area of 315 square feet was assumed. Parking facilities, including surface parking lots and

TABLE 4-5 TRANSPORTATION IMPACTS AND REQUIREMENTS FOR THE NIMITZ CLASS AIRCRAFT CARRIER

	Ship's Crew
ON-BOARD PERSONNEL LOADING	
Forrestal Class Aircraft Carrier, On Board Personnel	3,115
Nimitz Class (CVN) Aircraft Carrier, On Board Personnel	3,217
Net Change in Ship Board Persons	102
TRANSPORTATION IMPACTS/REQUIREMENTS	
Average Daily Trips	2,034
AM Peak Hour Trips	322
PM Peak Hour Trips	331
Required Vehicle Parking Spaces	847

Note: The estimation of vehicle trips is based on a trip generation rate of 2.4 trips per person, a vehicle occupancy rate of 1.30 and a net personnel increase of 1,102 persons (Crew and DMF). The required parking area is based on an average required area of 315 square feet per parking space.

Source: ITE, 1991.
Western Division NAVFACENGCOM, 1995.

multilevel parking garages, capable of providing an additional 847 spaces (6 acres) would be required to adequately meet the NAVSTA Mayport parking needs in 2010. This required parking area is based on the net increase in personnel (1,102 persons) with an VOR of 1.30.

The location and layout of DMF support facilities would dictate the availability of POV parking areas in the vicinity of the turning basin for ship crew and DMF personnel. Approximately 1,535 to 1,670 parking spaces would be available in the immediate vicinity of the wharf for carrier crew and depot personnel. Any remaining parking needs would be accommodated by a shuttle system to remote parking areas, which could be one-half mile or more from the facility.

4.1.3.10.4 Air Transportation Facilities

The increased ship-board personnel should have no adverse impact on the Jacksonville area airports.

4.1.3.10.5 Mass Transit Facilities

The Jacksonville Transportation Authority (JTA) provides five types of mass transit services to the Jacksonville area. Although additional development in the vicinity of NAVSTA Mayport is anticipated with the potential increase in ship-board personnel, ridership on public transportation in the Beaches area has decreased in recent years. Consequently, it is anticipated that the existing system of bus routes, supplemented by fare transfer and park-and-ride programs, would continue to adequately serve the transportation needs of the community and personnel at NAVSTA Mayport.

4.1.3.10.6 Port Facilities and Marine Vessel Movement

Locating a CVN at NAVSTA Mayport would require no modification to the turning basin other than increased depth. The proposed dredging of the Turning Basin to 50 feet below mllw would provide adequate depth for the deeper draft of the CVN. No navigational hazards associated with bringing the larger carrier would be expected.

The marine traffic volume would not change with the replacement of a CV with a CVN, nor would it significantly create navigation or circulation problems within the St. Johns River.

4.1.3.10.7 Rail Facilities

No adverse impacts on the rail facilities in the Jacksonville area or in the vicinity of NAVSTA Mayport would be expected to result from replacement of a CV with a CVN.

4.1.3.11 Community Services

Community services discussed in this section include education, medical and dental services, recreation and open space facilities, public safety, and law enforcement. Replacing a CV with a CVN would not be expected to cause significant increases in demand for these services. Nor would replacement result in a reduction of acceptable service standards for any of these community services. The CVN has a slightly larger on-board personal loading, but would be similar to a CV in its housing and community support requirements. In addition, NAVSTA Mayport has in the past accommodated as many as 37 ships, including two aircraft carriers, which is more than the projected ship loadings for any year through 2002.

4.1.3.11.1 Education

As discussed in Section 4.1.3.2, the replacement of a CV with a CVN would add 46 students to the NAVSTA Mayport area. The Duval County Public School System is currently overcrowded and has adopted portable classrooms, magnet schools, and a modified calendar for certain schools in an attempt to address overcrowding. Two to three new schools are needed but have not been authorized or funded. The addition of 46 new students to the Duval County Public School System would not have a significant impact on the delivery of educational services in Duval County. Based on the current ratio of one teacher for every 24 students, two additional teachers would be required for the additional students.

The number of Category A students from NAVSTA Mayport (those who live at NAVSTA Mayport or at base-owned housing at Ribault Village) would not increase unless new housing is constructed. Any addition in students from replacement of carrier types would be Category B (students who live off-base with a parent in the military service). Federal Impact Aid payments for Category A students would not change since no additional on-base housing is proposed, but Category B payments would increase slightly.

4.1.3.11.2 Medical Facilities

No significant impacts to medical and dental services provided on base or in the community would be expected to result because of the minimal population difference between a CV and a CVN.

4.1.3.11.3 Recreation

Since replacing a CV with a CVN would result in only a small increase in the number of households living in Duval County, no significant impacts to or increases in demands for recreational services on facilities off base are expected. The standard for urban area parks in the City of Jacksonville Recreation and Open Space Element of the Comprehensive Plan is 1.95 acres per 1,000 people, and the standard for "active/passive" parks in the suburban and rural areas is 1.06 acres per 1,000 people.

Existing on-base recreational facilities are considered adequate to meet the need for these services and have served larger base loadings.

4.1.3.11.4 Childcare

Waiting time for the on-base childcare program should not increase significantly since any increase in the number of pre-school age children and infants would be minor. Currently, waiting lists for different childcare age groups have 10 to 55 children.

4.1.3.11.5 Public Safety

The firefighter ratio in Duval County is 1.8 firefighters per 1,000 persons. There would be no significant increase in demand for these services.

The size of the NAVSTA Mayport fire department fluctuates depending on base loading and would be expected to increase as needed to provide continued adequate services to the base population. Existing fire protection services are adequate to meet the needs at NAVSTA Mayport. Any increase in demand for fire services would not reduce existing LOS below acceptable standards.

4.1.3.11.6 Law Enforcement

The law enforcement ratio is 1.8 sworn officers per 1,000 citizens. There would be a very minor increase in demand for these services in Duval County.

On-base law enforcement would be expected to grow in proportion to station population increases. The security department at NAVSTA Mayport is adequate to serve existing military base operations. Replacing a CV with a CVN would be expected to increase the need for station security. Security around the pier areas used by the CVN would need to be increased, and specific security measures would need to be incorporated into the design of the maintenance facility. Additionally, security measures would need to be implemented behind Piers C-1 and C-2, which are adjacent to the St. Johns River to the north. These measures might include fencing the area, increasing the number of patrol boats and patrol personnel, and increasing the restricted area. Meeting increased security needs likely would impact the NAVSTA Mayport security department's ability to provide services, unless additional resources were made available.

4.2 INDIRECT EFFECTS AND THEIR SIGNIFICANCE

Indirect effects are the secondary or induced changes to the physical, biological, and socioeconomic environments which would result from construction and operations associated with potential aircraft carrier homeporting. The indirect effects are summarized in this section, and are also discussed in more detail in the previous sections. Potential indirect short-term effects to the physical environment are erosion, air emissions, and noise. These impacts would occur primarily during facilities

construction, and dredging, and would be minimized by use of control measures and compliance with regulatory guidelines. An indirect effect to biological resources would be the displacement of species during construction, dredging, and disposal of dredged material. Positive indirect effects to the socioeconomic environment would include expenditures for construction and dredging, and salaries paid to personnel associated with the potential homeporting. The total construction cost is estimated to be approximately $141.2 million, which would be disbursed in the Jacksonville area if local contractors are selected. An average of approximately 225 full-time construction personnel would be employed during the construction period. Salaries of the ship personnel would be approximately $57.2 million per year. Additional military personnel and dependents would place added demands on community facilities and resources. Increased tax revenues from expenditures in the local area are expected to provide funds for additional community resources.

4.3 CUMULATIVE IMPACTS

Cumulative impacts are those changes to the physical, biological, and socioeconomic environments which would result from the effects of a proposed action when added to other past, present, and reasonably foreseeable actions, regardless of what agency of government or person undertakes such other actions. This cumulative impact analysis evaluates the potential homeporting action, assuming that the carrier would arrive at NAVSTA Mayport in the year 2010.

Past projects or those implemented or built prior to 2004, when potential construction could begin, would be considered to be part of the existing condition environmental baseline for cumulative impacts analysis. Included within the concept of past projects are all maintenance activities, land development projects, and other actions that occurred before further detailed analysis is initiated.

Projects planned for the Duval County area include residential and commercial developments, and roadway improvements. The proposed Wonderwood Expressway will provide improved access to the Mayport area, including the naval station. It is expected that the Jacksonville, Mayport, and Beaches areas will continue to be developed, consistent with existing patterns and trends, with or without CVN homeporting at NAVSTA Mayport. The local economy of the Mayport area would continue to be supported by the personnel who work at the naval station and reside in the area.

NAVSTA Mayport has homeported up to 37 Navy ships, including two aircraft carriers. Currently there are 23 ships, with one CV. The station has the capacity to support two conventionally-powered aircraft carriers. If the requirements of the CVN are met, the station would be able to support other CVN's in the future, and other ships with similar maintenance or basin depth requirements.

Homeporting a CVN at NAVSTA Mayport would cause varying levels of impacts to air and water resources, infrastructure, community services, economic activity,

transportation, and other resources. The action would represent only a small part of the cumulative impact which will result from anticipated population growth and development in the Jacksonville area. The effects of the CVN are expected to be minor when considered in the context of the anticipated growth in the Jacksonville/Mayport area.

4.4 COMPLIANCE WITH PLANS, POLICIES, AND CONTROLS

4.4.1 National Environmental Policy Act (NEPA)

NEPA directs that "to the fullest extent possible...all agencies of the federal government shall ... insure that presently unquantified environmental amenities and values may be given appropriate consideration in decision-making along with economic and technical considerations ..." This PEIS has been prepared in order to comply with the provisions of NEPA. This document provides analysis of impacts associated with the potential action. Compliance with NEPA for this programmatic EIS will occur with filing of the FPEIS with EPA and signing of a Record of Decision by the Navy. Full compliance with NEPA will require future NEPA documentation.

4.4.2 Clean Water Act

The Clean Water Act, as amended, regulates discharges to the waters of the United States. Section 404 of the Act regulates the discharge of dredged or fill material. Compliance with specific requirements of this section will be accomplished by coordination with the appropriate resource agencies, submittal or a permit application, and mitigation planning.

4.4.3 Rivers and Harbors Act of 1899

Section 10 of the Rivers and Harbors Act of 1899 prohibits the unauthorized obstruction or alteration of any navigable water of the United States, unless the work has been authorized by the Secretary of the Army by a permit. The Navy will apply for a permit for construction in the NAVSTA Mayport turning basin.

4.4.4 Clean Air Act

The Clean Air Act, as amended, provides for protection and enhancement of the nation's air resources. The Clean Air Act requires EPA review of this document. This document will be provided to EPA and the Florida Department of Environmental Regulation to review for consistency with Section 309 of the Clean Air Act. Navy will comply with air quality regulations and obtain all necessary permits for regulated emissions.

4.4.5 Fish and Wildlife Coordination Act

Section 10 of the Fish and Wildlife Coordination Act (16 US 661-666) directs federal agencies to consult with USFWS, NMFS, and state agencies before authorizing alteration to water bodies. The purpose of the Act is to assure that wildlife conservation receives equal consideration, and that it be coordinated with other features of water resource programs. The Navy has coordinated development of the proposed action with USFWS, NMFS, EPA, FDEP, and other state and federal agencies. These agencies will comment and submit recommendations to Navy on this document. The comments of these agencies will be considered during the preparation of the FPEIS.

4.4.6 Endangered Species Act

The Endangered Species Act of 1973, as amended, requires that action authorized by a federal agency shall not jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of designated critical habitat of such species.

Section 7 of the Act requires that the responsible federal agency consult with USFWS and NMFS concerning endangered and threatened species under their jurisdiction. This document has been prepared in order to comply with Section 7 requirements and concludes that the potential actions would not have an adverse impact on endangered and threatened species, and do not constitute a "may affect" situation for any endangered or threatened species.

4.4.7 National Historic Preservation Act

In accordance with Section 106 of the National Historic Preservation Act, potential impacts to historic and archeological resources have been evaluated. No known archeological or historic sites are documented in any of the construction areas. No archaeologic or historical sites are expected within the area to be dredged; however, if sites are encountered during development activities, operations would cease and inspection would be performed.

4.4.8 Coastal Zone Management

The Coastal Zone Management (CZM) Act of 1972, as amended, provides for the effective management, beneficial use, protection, and development of the resources of the United States coastal zone. The State of Florida has an approved CZM program that identifies CZM boundaries, areas of critical State concern, pollutant spill prevention and control requirements, dredging and filling regulations, and a variety of other regulations that have a direct impact on NAVSTA Mayport. The Navy ensures that Naval activities directly affecting the coastal zone or resources of the coastal zone will be carried out in a manner which is to the maximum extent practicable, consistent with the approved State CZM program. This PEIS with its findings and mitigation

measures is intended to serve as the consistency determination. It is the determination of the Navy that the potential impacts to the resources of the coastal zone will be minimized to the maximum extent practicable through agency reviews, permitting requirements, and implementation of best management practices.

4.4.9 Local Land Use Plans

The potential construction, operation, and maintenance activities are consistent with the land-use plans outlined in the NAVSTA Mayport Master Plan.

4.4.10 Floodplains

Executive Order 11988 - Flood Plain Management requires that federal agencies avoid activities which directly or indirectly result in development of floodplain areas. According to the Federal Emergency Management Agency maps and the NAVSTA Mayport Master Plan, portions of the potential construction would lie within the 100-year floodplain; however, facilities would be constructed above the 100-year floodplain level. Facilities construction would not lie directly within the tidal surge. The NAVSTA turning basin is the boundary of the tidal surge; therefore, the aircraft carrier would be berthed within the tidal surge area.

4.4.11 Wetlands

Executive Order 11990 - Protection of Wetlands directs federal agencies to take actions to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands on federal property. The potential action will not affect wetlands at NAVSTA.

4.4.12 Prime and Unique Farmland Soils

The purpose of the Farmland Protection Policy Act is to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. There are no soils classified by the U.S. Soil Conservation Service as prime farmland at NAVSTA, and no impacts are anticipated.

4.4.13 Pollution Prevention Act of 1990

The Pollution Prevention Act of 1990 establishes a national policy of pollution control including pollution prevention and reduction at the source; environmentally safe recycling or treatment; and disposal or release of pollutants as a last resort. The potential actions evaluated in this PEIS are subject to applicable provisions of this law and will be complied with by the Navy.

4.4.14 Coastal Barrier Resources

The Coastal Barrier Resources Act of 1982 requires that no new expenditures or financial assistance be made available for various construction projects within the boundaries of the Coastal Barrier Resources System. The potential construction for berthing an aircraft carrier would not affect any coastal barrier resources.

4.4.15 Oil Pollution Act of 1990

The Oil Prevention Act of 1990 establishes liability for cleanup costs and damages associated with oil spills. It also establishes oil spill prevention regulations and contingency planning and response requirements. All Navy ships and operation will conform to and strictly observe the provisions of this Act.

4.4.16 Administration of Environmental Policy

Executive Order 12989 - Federal Actions to Address Environmental Justices in Minority Populations and Low-income Populations. This law requires federal agencies to establish policy and assign responsibilities to prevent disproportionately high and adverse human or environmental effects on minority and low income populations. Based on the socioeconomic investigation for this PEIS, the action would not affect minority or low-income individuals. Should there be a proposal to homeport a CVN at NAVSTA Mayport, additional studies would be required at that time.

4.4.17 Marine Mammal Protection Act of 1972

The Marine Mammal Protection Act of 1972 (16 U.S.C. 1361 et seq.), as amended, establishes a national policy designated to protect and conserve marine mammals and their habitats. This policy is established so as not to diminish such species or population stocks beyond the point at which they cease to be a significant functioning element in the ecosystem, nor to diminish such species below their optimum sustainable population. The Marine Mammal Commission is responsible for reviewing and advising Federal agencies on the protection and conservation of marine mammals. The Commission has a Committee of Scientific Advisors, which provides advice on actions needed to fulfill the purposes of the Act. The USFWS and NMFS will review this PEIS and provide any comments regarding marine mammal protection.

4.4.18 Resource Conservation and Recovery Act (RCRA)

The potential homeporting will comply with RCRA policies regarding solid waste recycling and reclamation, and hazardous waste generation, transportation, treatment, storage, disposal, and recycling.

4.4.19 Marine Protection, Research, and Sanctuaries Act of 1972

The Marine Protection, Research, and Sanctuaries Act of 1972, as amended (33 USC Section 1401 et seq.) establishes a framework for the control of dumping material in the territorial sea and seaward, and includes specific criteria and conditions for permissible dumping. Section 102 of the Act authorizes the EPA to promulgate environmental criteria for evaluation of all dumping permit actions, to retain review authority over USAE Section 103 permits, and to designate ocean disposal sites for dredged material disposal. Section 103 of the Act specifies that all proposed operations involving the transportation and dumping of dredged material into ocean waters must be evaluated to determine potential environmental impacts of such activities. Under the authority of Section 103, the USAE may issue ocean dumping permits for dredged material if EPA concurs with the decision. If EPA does not agree with a USAE decision, a waiver process under Section 103 allows further action to be taken. The EPA and USAE also may determine that ocean disposal is inappropriate because of ODMDS management restrictions or because options for beneficial use exist. The Navy will apply for a Section 103 permit if disposal of dredged material at the ODMDS is proposed.

4.5 ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL

Energy in the form of various fossil fuels, electricity, and natural gas would be required during construction, operation, maintenance, and dredging activities. These energy requirements are in addition to existing site requirements. Energy conservation features would be incorporated into the project wherever possible. Facilities would be designed to incorporate energy savings, per Navy technical guidance. Mechanical and electrical design guidance (SODIV-TG-1003 and SODIV-TG-1004) provide specific regional guidance on systems selection and methods for conservation. Building siting and construction methods which offer energy savings are discussed in other Navy design guidance (MIL-HDBK-1001/1). Energy requirements for potential construction and operation of facilities and homeporting a CVN would not have a significant impact on energy requirements of the region.

4.5.1 Facility Construction

It is not possible to determine the energy requirements for the construction of the potential facilities due to the absence of construction plans. In general, construction can be divided into five phases: ground clearing, excavation, foundation construction, installation, and finishing. Each of these phases would require varying levels of energy input. Diesel fuel, used for equipment, would be the main type of energy required during construction of the facilities.

4.5.2 Facility Operation

The potential action and resulting population growth would be expected to increase electrical usage in the region; however, Jacksonville Electric Authority indicates that it expects to accommodate the demand without significant impact to the region. The

projected population growth in the region that can be attributed to the action also would have no significant impact on the electrical supply characteristic of the region.

Supplying natural gas and petroleum products to the facilities and vehicles associated with the potential action would not significantly impact the energy supply or cost in the region.

4.5.3 Dredging

The equipment utilized during dredging and dredged material disposal would include dredges, tugboats, bulldozers, and crew boats. The use of fuels required to complete the potential dredging and disposal activities is not expected to significantly impact the energy supplies, costs, or requirements of the area or region.

4.6 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

4.6.1 Resources Required

The potential facilities and associated construction, operation and maintenance, and dredging activities would require the commitment of various resources. These resources include the commitment of labor, capital, energy, biological resources, building materials, and land resources.

4.6.2 Commitment of Resources

There would be commitments of resources to the project which would preclude alternative uses of these resources. Short-term commitments of labor, capital, and fossil fuels would result directly from construction of the project and indirectly from the provisions of services to the site during construction. Long-term commitments of resources would result directly from operation and maintenance of the facilities and indirectly from the provisions of water, sewerage, electricity, gas, and solid waste services to the facility during operation. Building materials would also be long-term commitments.

The length of the commitment of land resources to the project would depend on the ultimate life of the facility. Since the proposed facilities are to be permanent, this commitment of land resources is long-term. Land resources could be converted to alternative use after operations of the project is completed; however, this would not occur in the foreseeable future.

4.7 RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

Establishment of a homeport for a CVN, and related construction and operation, would provide economic benefit in the form of increased employment and payrolls, both direct and indirect. The project would serve to maintain economic stability.

Long-term impacts on the biological productivity of the site would be minimal and localized. Future productivity of the benthic communities in the dredged areas might be somewhat reduced by conversion of these areas to deeper habitat.

4.8 UNAVOIDABLE ADVERSE IMPACTS

4.8.1 Physical Resources

Site topography will change slightly as a result of the filling and grading required for facility construction at any of the alternative construction sites. However, the majority of the potential sites are already developed; therefore, they will remain at existing elevations and grades.

Dredging activities would alter the bathymetry of the NAVSTA Mayport turning basin and entrance channel. Approximately 5.7 MCY of dredged material removal would be dredged for the navigation of a CVN. However, the changes would not result in significant impacts to the bathymetry of the area. Current depths vary from 35 to 50 feet below mllw; required depth is 50 feet below mllw, plus 2 feet overdredge.

The construction of facilities within the undeveloped area will necessitate clearing and grubbing of grasses for foundations. The construction activities may temporarily increase soil erosion from stormwater runoff. Construction activities exceeding five acres will require a Pollution Prevention Plan under NPDES. This plan would specify measures which will control erosion of soils associated with the construction.

Air quality impacts would be from emissions associated with facilities construction, dredging, and operation of facilities. Dredging would be the most significant source of NOx, up to approximately 376 tons/year. This is above the *de minimis* levels specified by the 1993 General Conformity Rule, and a conformity determination would be required if dredging is proposed and Duval County is still a maintenance area for ozone. Construction and operations emissions would be below *de minimis* levels. Emissions from some activities in the maintenance facilities will be regulated by FDEP, and filters or other emissions controls will be implemented. It is expected that permit requirements and Navy's compliance with the Clean Air Act will minimize adverse air quality impacts.

Construction noise will be generated by heavy machinery operation, materials handling, pile driving, and facility construction. Dredging and attendant waterborne equipment and land based earth moving equipment for construction and dredging would also generate noise during the construction phase. Noise levels would increase temporarily during dredging and disposal activities as well as during facility construction. Noise impacts to the public would be no greater than those which normally occur in the ship channel areas from periodic maintenance dredging activities. Any potential noise impacts to non-Navy housing are expected to be insignificant because of the distance from the potential construction areas, and similar existing noise levels of the area.

Water quality in the turning basin and entrance channels would incur minor short-term impacts during facility construction and dredging activities. Temporary increases in suspended solids loading due to soil erosion resulting from construction of various facilities could occur. Dredging will disrupt bottom substrate, increase turbidity, and decrease water clarity. Mobilization of soluble and particulate substrate contaminants into the water column and reduction in dissolved oxygen concentrations could occur. These impacts would be short-term and localized.

Potential impacts to the NAVSTA Mayport turning basin may result from normal operation and maintenance of the waterfront area. These include potential impacts from ship maintenance activities and stormwater runoff.

4.8.2 Biological Resources

The construction of support facilities required for berthing of a CVN could result in the loss of approximately four acres of existing landscaped vegetation. There are no wooded areas within the potential construction area. The terrestrial vegetation to be removed consists of planted grass and possibly a few shrubs and trees. The vegetated area is presently mowed and maintained.

The operation would have temporary and localized impacts to birds, mammals, reptiles and amphibians in the area. Elevated noise levels and increased human activity would cause the majority of temporary impacts. After construction, activity would be consistent with present conditions at the station.

The construction and operation of facilities, dredging, and disposal of dredged material would not impact any threatened or endangered species within the area. Activities would be temporary and localized. Marine species would relocate or avoid areas of activity involving increased turbulence and suspended solids.

NAVSTA Mayport turning basin impacts to seagrass beds, benthos, shellfish, and fish from construction and operations would be minor. No wetland habitat or critical species habitat would be removed or destroyed.

4.8.3 Socioeconomic Resources

No significant adverse impacts to socioeconomic resources would result from the proposed action. The proposed action should not significantly impact transportation, utilities, or other community facilities and services in the region. On-base facilities should not be adversely impacted since they have been designed to accommodate a larger population than is projected to occur with the proposed action.

4.9 MEANS TO MITIGATE ADVERSE ENVIRONMENTAL IMPACTS

Pursuant to requirements outlined in the Council of Environmental Quality regulations (40 CFR 1508.20), this PEIS contains suggested measures to minimize or reduce adverse impacts that cannot be avoided, resulting from the potential action.

4.9.1 Physical Resources

Erosion and control measures consistent with the requirements of the NPDES General Permit for Construction Activity would be utilized during construction. Typical practices include: silt fences, drainage swales, and temporary or permanent vegetation or straw cover.

All open portions of the site disrupted by construction activities will be landscaped and revegetated after construction in order to minimize erosion. Landscaping and associated maintenance activities (mowing, etc.) will also enhance the overall appearance of the potential facilities.

Potential impacts to air quality from activities at the maintenance facilities would be mitigated by use of recovery systems or other emissions controls, in compliance with Florida Administrative Codes. Navy will coordinate with FDEP and EPA regarding potential air quality impacts from dredging and dredged material disposal.

During construction, noise-producing activities would generally be conducted during normal operating hours to limit disturbance or annoyance.

4.9.2 Biological Resources

Because dredging and disposal of dredged material would have the highest potential for direct short-term impacts upon natural systems, efforts would be made to minimize these impacts. The best available equipment and techniques would be used to minimize quantity and area of distribution of suspended sediments. Dredging plans would be formulated to meet the requirements of the Clean Water Act.

In accordance with the Fish and Wildlife Coordination Act, Endangered Species Act, and Marine Mammal Protection Act; Navy will continue their ongoing coordination with the USFWS and NMFS to ensure compliance with these acts.

4.9.3 Socioeconomic Resources

If previously unidentified cultural resources are encountered during construction activities, that portion of the construction activity would be halted and professional archaeologists would be consulted to determine proper actions for recovering or preserving any significant cultural resources.

5.0 RADIOLOGICAL ASPECTS OF CVN HOMEPORTING

5.0 RADIOLOGICAL ASPECTS OF CVN HOMEPORTING

This section assesses the radiological environmental effects of Naval nuclear propulsion plants. Since radioactive material is an inherent by-product of the nuclear fission process, it's proper control has been a central concern for the Navy's nuclear propulsion program. From inception, all features of design, construction, operation, maintenance and personnel selection, training and qualification have been oriented towards minimizing environmental effects and ensuring the health and safety of workers, ships crew members, and the general public.

The history of safe operation of the Navy's nuclear-powered ships and their support facilities is a matter of public record. This record confirms that procedures used by the Navy to control releases of radioactivity from U.S. Naval nuclear-powered ships and their support facilities are effective in protecting the environment and the health and safety of the general public.

5.1 NORMAL OPERATIONS

The Navy issues an annual report which describes the Navy's policy and practices regarding such things as disposal of radioactive liquid, transportation and disposal of radioactive materials and solid wastes, and monitoring of the environment to determine the effect of nuclear-powered warship operations (U.S. Navy, 1996b). This report is provided to Congress and to cognizant federal, state and local officials in areas frequented by nuclear-powered ships. It has also been provided to the Jacksonville area libraries listed in Section 8.0 of this PEIS.

From the start of the Naval Nuclear Propulsion Program, the policy of the U.S. Navy has been to reduce to the minimum practicable the amounts of radioactivity released into harbors. Navy procedures to accomplish this have been reviewed with the U.S. Department of Energy, the U.S. Nuclear Regulatory Commission and the U.S. Environmental Protection Agency. The total gamma radioactivity released within 12 miles from shore from all U.S. Naval nuclear-powered ships and their support facilities in recent years is shown in Table 5-1; this includes all harbors both U.S. and foreign entered by these ships.

As a measure of the significance of this data, if one person were able to drink the entire amount of radioactivity discharged into any harbor in any of the last 22 years, that person would not exceed the annual radiation exposure permitted for an individual worker by the U.S. Nuclear Regulatory Commission.

The conclusions of this report can be applied directly to Naval nuclear-powered ships homeported at the Mayport, Florida site. The procedures that would be followed by such nuclear-powered ships in Mayport are no different from those followed by nuclear-powered ships homeported elsewhere. Ship refuelings will not be conducted in Mayport.

TABLE 5-1 RADIOACTIVE LIQUID RELEASED TO HARBORS FROM U.S. NAVAL NUCLEAR-POWERED SHIPS AND THEIR SUPPORT FACILITIES

Year	Number of Ships in Operation	Radioactivity-Curies (less tritium)
1971	100	less than 0.002
1972	104	less than 0.002
1973	107	less than 0.002
1974	111	less than 0.002
1975	113	less than 0.002
1976	115	less than 0.002
1977	120	less than 0.002
1978	124	less than 0.002
1979	126	less than 0.002
1980	126	less than 0.002
1981	133	less than 0.002
1982	137	less than 0.002
1983	142	less than 0.002
1984	144	less than 0.002
1985	147	less than 0.002
1986	149	less than 0.002
1987	148	less than 0.002
1988	148	less than 0.002
1989	147	less than 0.002
1990	143	less than 0.002
1991	140	less than 0.002
1992	135	less than 0.002
1993	121	less than 0.002

Homeporting of Naval nuclear-powered ships at the Mayport, Florida site should have no significant radiological environmental effect and no adverse impact on the health and safety of the public.

5.2 ROUTINE RADIOLOGICAL EFFLUENTS

Nearly all of the radioactive atoms in a nuclear reactor are fission products which originate in the fuel. The fuel elements in Naval propulsion reactor cores are designed and built with high fuel integrity to retain this fission product radioactivity. This high fuel integrity has been confirmed by extensive operating experience (over 4,500 reactor years). This is a necessity for sailors who must live in the enclosed atmosphere of a submarine and it is also followed in nuclear-powered surface ships. As a result, the release of airborne radionuclides from a nuclear-powered ship is much less than from typical commercial nuclear power plants. The airborne releases from the ships will be a very small fraction of those permitted by the U.S. Environmental Protection Agency in 40 CFR 61.

Since Naval nuclear fuel retains the fission product inventory, the small amount of radioactivity in the reactor coolant is primarily from activation of corrosion and wear products.

Radioactive liquids transferred to shore facilities are collected in stainless steel tanks and processed through a processing system to remove most of the radioactivity (exclusive of tritium) prior to collection in a clean tank for reuse. Even after processing to approximately 10^{-8} microcuries of gamma radioactivity per milliliter, reactor coolant is reused rather than discharged.

Environmental monitoring, consisting of harbor water and sediment samples, marine life samples, air samples and shoreline radiation surveys, would be performed prior to the arrival of nuclear-powered ships at Mayport and periodically thereafter. This preoperational survey will provide adequate baseline data so that the results of monitoring subsequent to the arrival of nuclear-powered ships can be compared to verify the absence of any significant radiological environmental impact. The environmental monitoring program at Mayport will be similar in scope and frequency to existing programs at the Naval Base in Norfolk, Virginia and the Naval Base in Kings Bay, Georgia; the results will be published annually in the Navy report cited above. The Naval Nuclear Propulsion Program would perform environmental monitoring at NAVSTA Mayport.

Environmental samples from each of these harbors are also checked at least annually by a U.S. Department of Energy laboratory to ensure that analytical procedures are correct and standardized. The U.S. Environmental Protection Agency has conducted independent surveys in U.S. harbors and the results have been consistent with the Navy results. These surveys have confirmed that U.S. Naval nuclear-powered ships and their support facilities have had no significant effect on the radioactivity of the marine environment.

5.3 RADIOACTIVE SOLID WASTE

A small amount of low level radioactive solid waste will be generated during ship operations and maintenance. This waste will be properly packaged and shipped for disposal to a burial site licensed by the U.S. Nuclear Regulatory Commission or a State under agreement with the Nuclear Regulatory Commission. The total amount of low level radioactive solid waste generated by Naval nuclear-powered ships and their support facilities is less than five percent of the total volume disposed of at commercial disposal sites. The amount of radioactive waste generated by the ships will be a small fraction of the Navy total. Particular care will be taken to avoid generation of mixed radioactive and chemically hazardous waste.

5.4 REACTOR DESIGN AND OPERATION

The design and operation of Naval nuclear-powered ships result in minimal risk of accidents while in port and low consequences should a problem occur. First of all, a naval reactor is rated at only a small fraction of the power of a commercial nuclear central station power plant. Second, ships are in port only a fraction of the time.

The normal condition of the reactor when they are in port is to be shutdown or operating at very low power levels. Third, Naval nuclear propulsion plants are very resilient; changes in these plant operating conditions are routine evolutions since the plants are designed to accommodate significant transients as would be expected for a plant that must be able to respond to the variable demands of warship propulsion.

Fourth, these plants must meet stringent military requirements for shock and battle conditions and are installed within strong hulls which must also meet stringent military requirements. Fifth, the operators of Naval nuclear reactors are carefully selected, qualified and trained to perform under adverse conditions. Finally, the mobility of the ships provides for the removal of the problem source in the unlikely event of an accident.

The strict adherence to conservative principles of design and operation of naval reactors was discussed on May 24, 1979, by the Director of the Naval Nuclear Propulsion Program (then Admiral H.G. Rickover) in Congressional testimony following the accident at Three Mile Island. Admiral Rickover emphasized that ensuring reactor safety is the responsibility of all personnel who work on Naval nuclear propulsion plants and that each element from training, to design, to construction, and to operation must be properly carried out in a coordinated fashion to achieve the goal of safe performance.

The Navy's record in ensuring the safe design and operation of nuclear propulsion plants is illustrated by the fact that naval reactors have accumulate over 4,500 reactor-years of operation without a reactor accident or any other problem having a significant effect of the environment.

5.5 ABNORMAL OPERATIONS

An analysis of reasonably foreseeable events was performed for an assumed release at Naval shipyards and the nearby King's Bay Facility. Since Mayport is close to King's Bay and has similar meteorological and demographic characteristics, the analysis is judged applicable to the proposed homeport. The analysis demonstrates that an assumed release of reactor coolant containing the radionuclides will have no significant impact on the environment. It should be noted that the assumed release represents the release of several thousands of gallons of water from a Naval nuclear propulsion plant which is far more than would be expected by foreseeable operations, collection tank ruptures and the like. The analysis is therefore conservative in that regard.

Information on the environmental impact of submarine sinking accidents which have occurred is contained in the Final Environmental Impact Statement (FEIS) on the Disposal of Decommissioned Defueled Naval Submarine Reactor Plants, May 1984, which has been incorporated by reference into the PEIS. As noted in the above-referenced FEIS, only low levels of corrosion product radionuclides exist in the sediments and these are confined to the immediate area of sunken ships. None of the samples showed any evidence of release of radioactivity from the reactor fuel elements. The amount of radioactivity found in the sediments is comparable to the value used in the release analysis noted above which has already been shown to have no significant environmental impact.

It is therefore concluded that a ship sinking accident at Mayport, even under the most destructive of circumstances as occurred with submarines exceeding test depth, would, by extension, have no significant environmental impact on the radiological quality of the environment.

5.6 EMERGENCY PLANNING

Mayport would be fully integrated into the Naval Nuclear Propulsion Program's emergency planning program. This includes utilization of the comprehensive and extensive local emergency response resource (personnel and materials) of all the Naval facilities located in both Mayport and Kings Bay.

Emergency response measures include provisions for immediate and comprehensive response to any emergency in a Naval nuclear propulsion plant, identification of the radiological conditions, and communication with civil authorities providing radiological data and recommendations for any appropriate protective actions.

In addition to the Naval Nuclear Propulsion Program resources, extensive Federal emergency response resources, as outlined in the Federal Radiological Emergency Response Plan (Federal Register, 1985), would also be activated as needed in such an emergency to support State or local response. The Federal Radiological Emergency Response Plan has provisions for activation at any time.

5.7 CONCLUSION

The Naval Nuclear Propulsion Program provides comprehensive technical management of all aspects of Naval nuclear propulsion plant design, construction and operation including careful consideration of reactor safety, radiological, environmental, and emergency planning concerns. The record of the Program's environmental and radiological performance at the operating bases and shipyards presently utilized by nuclear-powered warships demonstrates the continued effectiveness of this management philosophy. It further demonstrates that application of the environmental practices which are standard throughout the Program will assure the absence of any adverse radiological environmental effect at the Mayport, Florida homeport site.

6.0 COORDINATION

6.0 COORDINATION

6.1 AGENCY COORDINATION

Federal, state, and local agencies were consulted prior to and during the preparation of this PEIS. Agencies were initially notified of the project with a copy of the Notice of Intent (NOI) to prepare this document, which was mailed to individual agencies, and published in the Federal Register and local papers. Some agencies were also contacted by telephone or written correspondence during the course of the study. The agencies contacted are listed below.

6.1.1 Federal Government and Agencies

The following individuals or agencies representing the federal government were contacted during the preparation of this document.

Senator Bob Graham
Senator Connie Mack III
Representative Corrine Brown
Representative Tillie Kidd Fowler
Department of Commerce: National Marine Fisheries Service; National Oceanic & Atmospheric Administration
Department of Energy: Environment, Safety and Health
Department of Health and Human Services: Public Health Service
Department of Housing and Urban Development: Environmental Branch and Jacksonville Area Office
Department of the Interior: U.S. Fish and Wildlife Service; Bureau of Land Management; U.S. Geological Survey; Office of Environmental Project Review; National Park Service
Department of Transportation: U.S. Coast Guard, District 7; Federal Aviation Administration
Environmental Protection Agency, Region 4
Federal Emergency Management Administration
Soil and Water Conservation District
U.S. Army Corps of Engineers, Jacksonville District

6.1.2 State Government and Agencies

The following individuals or agencies representing the Florida state government were contacted during the preparation of this document.

Bureau of Land and Water Management, Division of Resource Planning and Management
Bureau of Soil and Water Conservation

Department of Agriculture and Consumer Services
Department of Environmental Protection
Department of Health and Rehabilitative Services
Department of State, Division of Historic Resources
Department of Transportation
Florida Game and Freshwater Fish Commission
Northeast Florida Regional Planning Council, Planning District 4
Office of the Governor
St. Johns River Water Management District
State Clearinghouse
State Emergency Response Commission
State Representatives
State Senators

6.1.3 Local Government and Agencies

The following individuals or agencies representing local government were contacted during the preparation of this document.

Duval County
Division of Bio-Environmental Services
Health Department
Planning Director

Atlantic Beach
City Manager
Mayor

Jacksonville
City Engineer
Community Services Relations Commission
Environmental Protection Board
Jacksonville Transportation Authority
Jacksonville Port Authority
Local Emergency Planning Committee
Mayor
Planning and Zoning Director
Regulatory & Environmental Services

Jacksonville Beach
City Manager
Mayor
Planning Director

Neptune Beach
City Manager
Mayor
Planning Director

6.2 PUBLIC COORDINATION

6.2.1 Opportunity for Comments

Throughout the preparation of this PEIS, an effort has been made to locate, inform, and seek input from interested individuals and organized groups. This effort included public notices, press releases, public scoping meeting, and public hearing. Individuals who submitted correspondence or who requested to be added to the mailing list will be sent copies of all future public notices. Members of the public will have further opportunities to comment after distribution of the Final PEIS. Organized groups with whom the Navy has coordinated this study include, but are not limited to, those listed below.

American Rivers Council
Association of General Contractors
Barefoot Alliance
Coastal Environmental Society
Environmental Education Resource Council of Northeast Florida
Environmental & Natural Resources Law Center, Inc.
Florida Chamber of Commerce
Florida Public Interest Group
Florida Wildlife Federation
Greenpeace Southeast
Greenscape of Jacksonville Inc.
Jacksonville Association of Realtors
Jacksonville Chamber of Commerce
Jax Pride
Keep Jacksonville Beautiful
League of Conservation Voters
League of Women Voters
National Audubon Society
National Ocean Industries Association
National Wildlife Federation
Northeast Florida Builders Council
Northeast Florida League of Cities
St. Johns Audubon Society
Sierra Club, Florida Chapter
The Nature Conservancy
Wildlife Society, Florida Chapter

6.2.2 Scoping Meeting

A public scoping meeting was held on October 26, 1993 at 7:00 p.m. at Fletcher Senior High School auditorium, Neptune Beach, Florida. The purpose of the meeting was to determine the scope of significant issues to be examined in this Programmatic Environmental Impact Statement. There were 48 individuals in attendance at the public scoping meeting, of which two were representing public officials. Seven of the attendants requested the opportunity to comment at the meeting. Nine written comments and one City Council Resolution were also received, responding to the NOI mailing and the public scoping meeting.

6.2.3 Public Hearing

A public hearing was held on April 24, 1996 at 7:00 p.m. at Fletcher Senior High School auditorium, Neptune Beach, Florida. The hearing was held during the public comment period for the Draft PEIS. There were approximately 17 individuals registered at the meeting. Two persons commented at the meeting, expressing support for future CVN homeporting at NAVSTA Mayport. Two written comment forms were received at the hearing, and 14 written comment letters and form responses were received after the meeting.

7.0 LIST OF PREPARERS

7.0 LIST OF PREPARERS

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Name and Document Contribution	**Associated Professional Expertise**
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Patricia A. Matthews, P.E. (TC&B) Project Manager	Civil/Environmental Project Manager: 17 years of experience in planning and design of environmental and civil projects, and preparing environmental assessments and impact statements.
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Gregory D. Ray (TC&B) Physical Resources	Civil/Environmental Engineering: 5 years of experience in civil and environmental engineering projects and planning studies.
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Thomas Burke (WAR) Socioeconomic Systems	Environmental Engineering: 5 years of experience in environmental impact assessment.
Douglas Keesecker (WAR) Socioeconomic Systems	Environmental Engineering: 10 years of experience in environmental impact assessment.

8.0 DISTRIBUTION LIST

8.0 DISTRIBUTION LIST

This list of recipients includes federal, state, and local agencies and individuals who will receive the Final Programmatic Environmental Impact Statement.

FEDERAL OFFICES AND AGENCIES

Senators
The Honorable Bob Graham
The Honorable Connie Mack, III

Representatives
The Honorable Corrine Brown
The Honorable Tillie K. Fowler

Department of Agriculture
Bureau of Soil and Water Conservation

Department of Commerce
National Marine Fisheries Service
National Oceanic and Atmospheric Administration

Department of Defense
U.S. Army Corps of Engineers

Department of Health and Human Resources
Public Health Service

Department of Housing and Urban Development
Federal Emergency Management Agency

Department of Interior
U.S. Geological Survey
U.S. Fish and Wildlife Service, District Office
U.S. Fish and Wildlife Service, Region IV
National Park Service, Southeast Region
Office of Environmental Policy and Compliance
Bureau of Land Management, Director
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Department of Transportation
U.S. Coast Guard, District 7
Federal Aviation Administration

Environmental Protection Agency
Region IV Administrator, Atlanta, Georgia

STATE OFFICIALS AND AGENCIES

Governor
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Senators
Honorable Jim Horne, District 6
Honorable Betty Holzendorf, District 7
Honorable Bill Bankhead, District 8

Representatives
Honorable George A. Crady, District 12
Honorable Stephen R. Wise, District 13
Honorable Willye F. Dennis, District 15
Honorable James B. Fuller, District 16
Honorable James E. King, Jr., District 17
Honorable Joseph Arnall, District 18
Honorable John Thrasher, District 19

State Agencies
State Clearinghouse, Department of Community Affairs
Florida Department of Environmental Protection
Florida Game and Freshwater Fish Commission
Florida Department of State, Division of Historic Resources
Florida Natural Areas Inventory
Northeast Florida Regional & Planning Council
St. Johns River Water Management District

LOCAL OFFICIALS AND AGENCIES

Jacksonville Port Authority
Local Emergency Planning Committee

Duval County
Planning Director
Division of Bio-Environmental Services
County Health Department

City of Jacksonville
Honorable John A. Delaney, Mayor
Regulatory and Environmental Services
Community Services Relations Commission
City Engineer

Atlantic Beach
Honorable Lyman T. Fletcher, Mayor
City Manager
Commissioner Tim Reed

Jacksonville Beach
Honorable William B. Latham, Mayor
City Manager
Planning Director

Neptune Beach
Honorable John C. Kowkabany, Mayor
City Manager
Planning Director

Media
Florida Times-Union
Beaches Leader
Folio Weekly
Financial News & Daily Record

Libraries
Beaches Library, Neptune Beach
Regency Square, Jacksonville
Book Mobile Service
Jacksonville Public Library, Main Library
Colorado State University, Fort Collins, Colorado

Organizations
Barefoot Alliance
Coastal Environmental Society
Environmental Education Resource Council of Northeast Florida
Environmental Round Table of Northeast Florida
Florida Chamber of Commerce
Greenpeace Southeast
Jacksonville Chamber of Commerce - Beaches Division
Jacksonville Chamber of Commerce
Jacksonville Electric Authority
Jax Pride
Keep Jacksonville Beautiful
League of Women Voters
League of Conservation Voters
National Audubon Society
Nature Conservancy
Northeast Florida League of Cities
Sierra Club

Individuals
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John Nash, Falls Church, Virginia
Charlene Toomer, Arlington, Virginia

9.0 REFERENCES

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Adams, B. 1994. Personal Communication. Duval County Public Schools, Pupil Assignment Office. Jacksonville, Florida.

Adamus, C., D. Arnold, B. Poole, and J. Royal. 1987. Comprehensive Shellfish Harvesting Area Survey, Duval County, Florida. Florida Department of Natural Resources, Shellfish Environmental Assessment Section, Tallahassee, Florida.

Brinson, H. 1992. Personal communication with Thomas Burke of Water and Air Research, Inc., regarding mass transit resources in the vicinity of NAVSTA Mayport. Jacksonville, Florida.

Bureau of Economic and Business Research (BEBR). 1980. Florida Statistical Abstract. University of Florida. Gainesville, Florida.

Bureau of Economic and Business Research (BEBR). 1990. Florida Statistical Abstract. University of Florida. Gainesville, Florida.

Bureau of Economic and Business Research (BEBR). 1991. The Florida Long-Term Economic Forecast 1991. Volume 2: State and Counties. University of Florida. Gainesville, Florida.

Bureau of Economic and Business Research (BEBR). 1992. The Florida Economic Forecast 1992. Volume 1: State and MSA's. University of Florida. Gainesville, Florida.

Bureau of Economic and Business Research (BEBR). 1993. 1993 Florida Statistical Abstract. University of Florida. Gainesville, Florida.

Chesapeake Division (CHESDIV). 1992. Fast Combat Support Ship (AOE-6 Class) Homeporting Naval Weapons Station Earle Colts Neck, New Jersey. Naval Facilities Engineering Command. Washington, D. C.

City of Jacksonville. 1990. Comprehensive Plan 2010. Conservation/Coastal Management Element. Jacksonville Planning and Development Department. Jacksonville, Florida.

City of Jacksonville. 1993. Environmental Status Report. Environmental Protection Board. Jacksonville, Florida.

City of Jacksonville. 1994. Telephone communication with Ken King. Air Quality Division. Jacksonville, Florida.

City of Jacksonville Fire/Emergency. 1994. Personal Communication with J. Peavy, Public Information Officer, City of Jacksonville Fire-Emergency. Jacksonville, Florida.

Demort and Bowman. 1985. Seasonal Cycles of Phytoplankton Populations and Total Chlorophyll of the Lower St. Johns River Estuary, Florida. Florida Scientist 48(2): 83-96.

Department of the Army. 1994. Mayport Naval Station. After Dredging Survey 42-foot Project. Turning Basin Dredging Plan. NAVSTA Mayport, Florida.

Department of Education (DOE). 1994a. Personal Communication with C. Schagh. U.S. Department of Education (DOE), Office of Elementary and Secondary Education, Impact Aid Program Office. Washington D.C.

DOE. 1994b. Personal Communication with G. Spencer, U.S. Department of Education, Office of Elementary and Secondary Education, Impact Aid Program Office. Washington, D.C.

Duval County, 1994. Personal Communication with G. Clements. Labor Economist. Duval County Department of Labor and Employment Security. Jacksonville, Florida.

Duval County. 1994. Personal Communication with C. Pierson, Solid Waste Disposal, Duval County. Jacksonville, Florida.

Duval County Public Schools. 1994. Personal Communication with B. Jackson, Budget Director. Duval County Public Schools. Jacksonville, Florida.

Ekburg, D.R. and G.R. Huntsman. 1985. Offshore Fisheries and Related Habitats in Proceedings of Fish Habitat Symposium. pp. 71-94.

Environmental Protection Agency (EPA). 1983. Final Environmental Impact Statement (EIS) for Jacksonville Harbor, Florida, Ocean Dredged Material Disposal Site Designation.

EPA. 1991. Commercial Marine Vessel Contributions to Emission Inventories. Final Report. U.S. EPA. Ann Arbor, Michigan. October 7, 1991.

EPA. 1994. Written Communication regarding suitability of dredged material for disposal at Jacksonville ODMDS. Atlanta, Georgia.

EPA. 1995. Compilation of Air Pollution Emission Factors, Volume I: Stationary Point and Area Sources, Fifth Edition, AP-42. U.S. EPA, Research Triangle Park, NC, 1995.

Envirosphere Company. 1981. St. Johns River Power Park Site Certification Application/Environmental Information Document. Aquatic Ecology Section. Volume III, Appendix B. Prepared for Jacksonville Electric Authority. Atlanta, Georgia.

Federal Emergency Management Agency (FEMA). 1992. Flood Insurance Rate Map, City of Jacksonville, Florida, Duval County. Panel 253, #1200770253F Map date April 15, 1992.

Florida Department of Transportation (FDOT). 1993. Personal communication between Thomas Burke of Water and Air Research, Inc., and FDOT personnel regarding average daily traffic volumes and roadway level of service in the vicinity of NAVSTA Mayport. Lake City, Florida.

Florida Natural Areas Inventory. (FNAI) 1990. Guide to the Natural Communities of Florida. Tallahassee, Fla: Fla. Nat. Areas Inventory and Fla. Dept, Nat. Res.

Florida Natural Areas Inventory. 1994a. First and Second Quarter Progress Report of Biological Inventory of Mayport Naval Station.

Florida Natural Areas Inventory. 1994b. Written Communication Regarding Threatened/Endangered and Species of Special Concern. Tallahassee, Florida.

Florida Natural Areas Inventory. 1995. Personal Communications with Dan Hipes. Jacksonville, Florida.

Florida Game & Fresh Water Fish Commission. 1982. Rare and Endangered Biota of Florida Invertebrates. Prepared by the Florida Committee on Rare and Endangered Plants and Animals.

Florida Game & Fresh Water Fish Commission (FG&FWFC). 1994a. Personal Communication with Keith Singleton. Lake City, Florida.

Florida Game & Fresh Water Fish Commission. 1994b. Written Communications Regarding Threatened/Endangered and Species of Special Concern. Lake City, Florida.

Fowler, R. 1994. Personal Communication. Crime Research Aide, City of Jacksonville Sheriff's Office. Jacksonville, Florida.

Gee and Jensen. 1994. Study for CVN at Naval Station Mayport, Florida. Waterfront Structures and Utilities Structural and Mooring Analysis/Utility Review. Wharf C2 and Wharf F. West Palm Beach, Florida.

Hoese, H. Dickson and Moore, Richard H. 1977. Fishes of the Gulf of Mexico and Adjacent Waters. Texas A&M University Press, College Station.

Institute of Transportation Engineers (ITE). 1991. Trip Generation, Fifth Edition. Washington, D.C.

Jacksonville Business Journal. 1994. Discover Jacksonville. Jacksonville, Florida.

Jacksonville Planning and Development Department. 1986. North District Plan. Jacksonville, Florida.

Jacksonville Planning and Development Department. 1990a. Future Land Use Element of the Comprehensive Plan 2010. Jacksonville, Florida.

Jacksonville Planning and Development Department with Participation of Jacksonville Housing and Urban Development. 1990b. Housing Element of the Comprehensive Plan 2010. Jacksonville, Florida.

Jacksonville Planning and Development Department. 1990c. Potable Water Element of the Comprehensive Plan 2010. Jacksonville, Florida.

Jacksonville Planning and Development Department. 1990d. Port, Aviation and Related Facilities Element of the Comprehensive Plan 2010. Jacksonville, Florida.

Jacksonville Planning and Development Department. 1990e. Recreation and Open Space Element of the Comprehensive Plan 2010. Jacksonville, Florida.

Jacksonville Planning and Development Department. 1990f. Sanitary Sewer Element of the Comprehensive Plan 2010. Jacksonville, Florida.

Jacksonville Planning and Development Department. 1990g. Traffic Circulation Element of the Comprehensive Plan 2010. Jacksonville, Florida.

Jacksonville Planning and Development Department. 1993. Building Permit Report for the City of Jacksonville, Annual 1993. Jacksonville, Florida.

Jacksonville Planning and Development Department and the Northeast Florida Apartment Council. 1994a. Apartment Market Survey for Greater Jacksonville, Florida (including portions of Clay and St. Johns Counties), First Quarter, 1994. Jacksonville, Florida.

Jacksonville Planning and Development Department. 1994b. 1993 Annual Statistical Package. Jacksonville, Florida.

Kraus, S.D. and R.D. Kenney. 1991. Information on Right Whales (*Eubalaena glacialis*) in Three Proposed Critical Habitats in U.S. Waters and the Western North Atlantic Ocean. U.S. Marine Mammal Commission. Washington, D.C.

Kraus, Scott D., Robert D. Kenney, Amy B. Knowlton, and J.N. Ciano. 1993. Endangered Right Whales of the Southwestern North Atlantic. Edgerton Research Laboratory New England Aquarium Central Wharf. Boston, Massachusetts.

Marine Mammal Commission. 1988. Preliminary Assessment of Habitat Protection Needs for West Indian Manatees on the East Coast of Florida and Georgia. Washington, D.C.

Marine Mammal Commission. 1994. Annual Report to Congress. Washington, D.C.

Melchiorre, K. 1994. Personal Communication. Hazardous Waste Management, Navy Public Works Center Jacksonville. Jacksonville, Florida.

Morris, Frederick W. 1993. Draft Hydrodynamics and Salinity of the Lower St. John's River, Volume 3 Reconnaissance Report; February 26, 1993. Jacksonville, Florida.

Myers, Ronald L. and John J. Ewel. Ecosystems of Florida. University of Central Florida Press. Orlando, 1990.

National Geographic Society. 1987. Field Guide to the Birds of North America.

National Oceanic and Atmospheric Administration (NOAA). 1991. Nautical Chart 11491: Florida St. Johns River Atlantic Ocean to Jacksonville. Chart 11491, 25th ed. U.S. Department of Commerce National Oceanic and Atmospheric Administration; National Ocean Service. Washington, D. C.

Naval Facilities Engineering Command (NAVFACENGCOM), not dated. An Engineering Evaluation of Fine Sedimentation at the Mayport Naval Basin. Prepared for Naval Station Mayport & Southern Division NAVFACENGCOM by NAVFACENGCOM, Alexandria, Virginia.

Naval Sea Systems Command (NAVSEA). 1994. Aircraft Carrier Emission Information. Ships Environmental Support Office. Arlington, Virginia.

NAVSEA. 1994b. CVN Homeporting Environmental Impact. Commander, Naval Sea Systems Command. Arlington, Virginia.

NAVSTA Mayport. 1993a. Fish & Wildlife Section of the Natural Resources Plan for Naval Station Mayport, Florida.

NAVSTA Mayport. 1993b. Installation Restoration. Handouts for Research and Development Meeting. September 21-22, 1993. NAVSTA Mayport, Florida.

NAVSTA Mayport Public Affairs Office (PAO). 1993. Naval Station Mayport Shareholder's Report 1993. NAVSTA Mayport, Florida.

NAVSTA Mayport. 1994a. Correspondence with Mike McVann, Staff Civil Engineer. NAVSTA Mayport, Florida.

NAVSTA Mayport. 1994b. Correspondence with Mike Davenport, Staff Civil Engineer Environmental Engineer Mayport, Florida.

NAVSTA Mayport. 1994c. Personal Communication with M. Nance. Family Housing Office. NAVSTA Mayport. Mayport, Florida.

NAVSTA Mayport. 1994d. Personal Communication with C. James. Barracks Administration. NAVSTA Mayport. Mayport, Florida.

NAVSTA Mayport. 1994e. Personal Communication with J. Wilson. Family Childcare Center. NAVSTA Mayport. Mayport, Florida.

NAVSTA Mayport. 1994f. Personal Communication with S. Lindsey, Family Child Care Center Coordinator. NAVSTA Mayport. Mayport, Florida.

NAVSTA Mayport. 1994g. Personal Communication with R. Dietz, Fire Chief. NAVSTA Mayport, Mayport, Florida.

NAVSTA Mayport. 1994h. Personal Communication with D. Morrison, Deputy Chief, Operations, Security Department. NAVSTA Mayport. Mayport, Florida.

NAVSTA Mayport. 1994i. Personal Communication with C. James Bachelor Quarters Officer Naval Station Mayport. Mayport, Florida.

NAVSTA Mayport. 1995. Personal Communication with John Veal, Staff Civil Engineer Department. NAVSTA Mayport. Mayport, Florida.

NAVSTA Mayport. 1996. Updated information provided in May 21, 1996 letter (reference 5090.2, Ser N4E/00137). Mayport, Florida.

NAVSTA Mayport. Undated (n.d.). An Engineering Evaluation of Fine Sedimentation at the Mayport Naval Base. Naval Station Mayport & Southern Division Naval Facilities Engineering Command.

NAVSTA Mayport Family Housing Office. 1994. DD1377 Tabulation of Family Housing Survey. NAVSTA Mayport. Mayport, Florida.

NAVSTA Mayport Personnel Services Detachment. 1994. NAVSTA Mayport. Mayport, Florida.

Naval Sea Systems Command (NAVSEA). 1994. Basic Facility Requirements Proposed Mayport Facility. Code 300.1A. Portsmouth, Virginia

Rehm, A.E., F.C. Tone, and J.A. Kirkwood. 1975. Biological Assessment of Water and Marsh Areas of the St. Johns River. Battelle Columbus Laboratories. Duxbury, Massachusetts.

Soil Conservation Service (SCS). 1994. Telephone Communication with Julie Dame. U.S. Soil Conservation Service. Jacksonville, Florida.

Southern Division (SOUTHDIV). 1989. Master Plan: Complex Overview. Naval Complex Mayport, Florida. Southern Division Naval Facilities Engineering Command. Charleston, South Carolina

SOUTHDIV. 1992. Environmental Compliance Evaluation Southern Division Naval Facilities Engineering Command. Charleston, South Carolina.

SOUTHDIV. 1993. EA Construction and Operation of a 50 Unit Navy Lodge. Naval Facilities Engineering Command. Naval Station Mayport, Florida.

SOUTHDIV. 1995. Final Site Development Study for CVN Homeporting at NAVSTA Mayport, Florida. Southern Division, Naval Facilities Engineering Command.

St. Johns River Power Park. 1980. Jacksonville Power Park Benthic Data. Environmental Information Document, Aquatic Ecology Section.

St. Johns River Water Management District. 1992. Lower St. Johns River Basin Reconnaissance Report Biological Resources Volume. Version 5.0. Unpublished.

St. Johns River Water Management District. 1994. Volume 6 of the Lower St. Johns River Basin Reconnaissance Biological Resources. Technical Publication SJ94-2. Palatka, Florida.

Sumich, James L. 1988. Biology of Marine Life. Wm. C. Brown Publishers. Dubuque, Iowa.

Sustar, John F., Thomas H. Wakeman, and Richard M. Ecker. 1976. Sediment Work Interaction During Dredging Operations in Proceedings of the Specialty Conference on Dredging and its Environmental Effects, pp. 278-281. New York: American Society of Civil Engineers.

Turner Collie and Braden, Inc. (TC&B). 1993. Project Memorandum from P. Matthews Turner, Collie, and Braden, Inc. summarizing the meeting at Naval Station Mayport on October 27, 1993. Houston, Texas.

U.S. Army Corp of Engineers (USAE). 1994a. Mayport Carrier Homeporting Study: Final Disposal Area Study. U.S. Army Corps of Engineers, Jacksonville District, South Atlantic Division. Jacksonville, Florida.

USAE. 1994b. Communication with Eunice Ford. U.S. Army Corp of Engineers. Jacksonville District. Jacksonville, Florida.

U.S. Department of the Interior Geologic Survey (USGS). 1982. Mayport Quadrangle 7.5 Minute Series Topographic Map. Duval County Mayport. Florida.

U.S. Fish & Wildlife Service. 1989. Florida Manatee (*Trichechus manatus latirostris*) Recovery Plan. Prepared by the Florida Manatee Recovery Team for the U.S. Fish & Wildlife Service, Atlanta, Georgia. 98 pp.

U.S. Fish & Wildlife Service. 1993a. Endangered and Threatened Wildlife and Plants. U.S. Department of Interior. Washington, D.C.

U.S. Fish & Wildlife Service. 1993b. 1992 Annual Progress Report for the Florida Manatee Recovery Plan. Prepared by the Jacksonville Field Office, USFWS with cooperation of the Manatee Recovery Team. pp.62.

U.S. Fish & Wildlife Service. 1994. Information included as attachment to November 15, 1994 letter. Jacksonville, Florida.

U.S. Fish & Wildlife Service. 1996. Comment letter of May 3, 1996. Jacksonville, Florida.

U.S. Government Printing Office. 1993. Defense Base Closure and Realignment Commission. 1993 Report to the President. Washington, D.C.

U.S. Navy. 1995a. Draft Environmental Impact Statement for the Development of Facilities in San Diego to Support the Homeporting of One NIMITZ Class Aircraft Carrier. May 1995.

U.S. Navy. 1995b. Final Environmental Assessment. Realignment of Commander Afloat Training Group Assets by Relocation of the Fleet Training Group at Guantanamo Naval Base, Guantanamo Bay, Cuba. July 1995.

U.S. Navy. 1995c. Telephone Communication with K. Benton, Public Works Center. Jacksonville, Florida.

U.S. Navy. 1995d. Natural Resources Management Plan. NAVSTA Mayport, Florida. April 1995.

U.S. Navy. 1995e. Bird Survey for NAVSTA Mayport, Florida. June 1995.

U.S. Navy. 1996a. COMNAVBASE Jacksonville letter SerN3/0672 dated August 2, 1996.

U.S. Navy. 1996b. Environmental Monitoring and Disposal of Radioactive Wastes from U.S. Naval Nuclear-powered Ships and their Support Facilities. Report NT-96-1. Naval Nuclear Propulsion Program. Washington, D.C.

Vidrine, C. 1994. Unpublished Data. Navy Public Works Center, Naval Station. Norfolk, Virginia.

Wechsler, E. 1994. Personal Communication. Duval County Public Schools Pupil Assignment Office. Jacksonville, Florida.

White Publishing Company. 1994. Opportunity Jacksonville, The Business of Northeast Florida, Fall/Winter 1994. "Why the NFL Chose Us." Jacksonville, Florida.

COMMENTS AND RESPONSES

COMMENTS AND RESPONSES

This section includes all written and oral comments received during the comment period. Each submission was assigned one of the following letter codes, corresponding to the following groups:

F - federal agencies and officials
S - state agencies and officials
L - local agencies and officials
G - special interest groups, businesses and associations
P - public (individuals not officially associated with one of the above)

The codes were assigned to assist in organization of this document; priority or special treatment was neither intended nor given in the response to comments. Oral comments have been extracted from the testimony given at the public hearing. The public hearing transcript is not reprinted in the FEIS; however, it is available for review at the Naval Station Mayport Public Affairs Office.

Responses to comments immediately follow each letter or statement. The order of presentation is according to "group" code, beginning with F (see listing above), followed by S, L, G, and P. Although the St. Johns River Water Management District is a local jurisdictional agency, the State Clearinghouse coordinated DEIS review with them, and their comments are included with state comments.

INDEX OF COMMENTS

Agency/Public Commentor

Federal

F-5	Environmental Protection Agency Region 4	May 10, 1996	Written
F-6	Department of Interior Office of Environmental Policy and Compliance	May 13, 1996	Written
State			
S-1	State Clearinghouse Department of Community Affairs cover letter for S-2 through S-6	May 21, 1996	Written
S-2	Department of Environmental Protection	May 1, 1996	Written
S-3	St. Johns River Water Management District	April 22, 1996	Written
S-4	Marine Fisheries Commission	March 22, 1996	Written
S-5	Division of Historical Resources	April 5, 1996	Written
S-6	Department of Transportation	April 3, 1996	Written
Local			
L-1	City of Jacksonville	April 24, 1996	Written
Groups/Businesses/Associations			
G-1	Florida Natural Areas Inventory	May 13, 1996	Written
Public			
P-1	William J. Flick	April 24, 1996	Written
P-2	Christie Musgrave	April 24, 1996	Written
P-3	John Meserve	April 24, 1996	Verbal
P-4	Walt Fanton	April 24, 1996	Verbal

UNITED STATES DEPARTMENT OF COMMERCE
Office of the Under Secretary for
Oceans and Atmosphere
Washington, D.C. 20230

May 1, 1996

Commanding Officer
Southern Division
Naval Facilities Engineering Command
Attn: Ronnie Lattimore, Code 064RL
P.O. Box 190010
North Charleston, SC 29419-9010

Dear Mr. Lattimore:

Enclosed are comments on the Draft Environmental Impact Statement for Evaluate Facilities Development Necessary to Support Potential Aircraft Carrier Homeporting at Naval Station Mayport, Florida. We hope our comments will assist you. Thank you for giving us an opportunity to review this document.

Sincerely,

Donna S. Wieting
Acting Director
Ecology and Conservation Office

Enclosure

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
9721 Executive Center Drive N.
St. Petersburg, Florida 33702

April 22, 1996

Commanding Officer
Southern Division
Naval Facilities Engineering Command
Attn: R. Lattimore, Code 064RL
P.O. Box 190010
North Charleston, South Carolina 29419-9010

Dear Sir:

The National Marine Fisheries Service (NMFS) has reviewed the Draft Programmatic Environmental Impact Statement (DPEIS) entitled, "Facilities Development Necessary to Support Potential Aircraft Carrier Homeporting at Naval Station Mayport, Florida," dated March 1996.

Impacts to living marine resources from further deepening the St. Johns River entrance channel and the Navy's Mayport turning basin and entrance channel are not expected to be significant. The ocean disposal site and the material to be disposed have been approved by EPA. The additional proposed support facilities also will be on uplands. Therefore, we do not object to project construction and have no comments on the DPEIS.. (1)

Sincerely,

Andreas Mager, Jr.
Assistant Regional Director
Habitat Conservation Division

National Marine Fisheries Service, Southeast Regional Office
St. Petersburg, Florida
Written Comments

RESPONSE

1. Comment noted.

United States Department of the Interior

NATIONAL PARK SERVICE

FORT CAROLINE NATIONAL MEMORIAL
TIMUCUAN ECOLOGICAL & HISTORIC PRESERVE
13165 MT. PLEASANT ROAD
JACKSONVILLE, FLORIDA 32225

IN REPLY REFER TO:

L

May 2, 1996

Commanding Officer
Southern Division, Naval Facilities Engineering Command
Attn: Ronnie Lattimore, Code 064RL
P.O. Box 190010
North Charleston, South Carolina 29419-9010

Dear Sir:

We appreciate the opportunity to provide comments relating to the Draft Programmatic Environmental Impact Statement for the Facilities Development Necessary to Support Potential Aircraft Carrier Homeporting at the Naval Station, Mayport, Florida. A portion of Naval Station Mayport is included within the boundaries of the Timucuan Ecological and Historic Preserve, a unit of the National Park System.

Located at the mouth of the St. Johns, the potential exists for cultural resources to be present in the areas proposed for on shore development. The two cultural sites identified on the west side of the turning basin, referenced on page 3-9, were investigated by the National Park Service, with the approval of the Navy, in 1991 as a part of overall archeological investigations for the Timucuan Preserve. As other sites may be present in the area, we encourage the Navy to complete an archeological survey and testing of on shore development sites prior to construction. (1)

We support the option of off shore disposal of dredged materials from the turning basin, with the understanding that periodic samples of materials will continue to meet EPA standards and that continued concurrence with EPA will be sought when the current agreement expires in March, 1997. Should upland disposal be considered, the National Park Service requests additional information on the proposed disposal sites identified in Figure 2-7. It is difficult to determine the scale in this figure but it would appear that at least 5 and perhaps as many as 8 of the proposed upland disposal sites would be within the boundaries of the Timucuan Ecological and Historic Preserve. The National Park Service is also interested in what concepts the Navy has explored for mitigation should upland disposal be utilized. (2)

We could not find any indication in the document where potential impacts to Outstanding Florida Waters that this project may cause have been addressed. All waters within the Timucuan Preserve are designated as Outstanding Florida Waters. While the turning basin is outside of Preserve boundaries, the legislated boundary crosses the St. Johns River just upstream from the basin and continues across the river, following the shoreline of Huguenot Park. (3)

According to section 403.061(27), Florida statutes, Outstanding Florida Waters are to be preserved in a nondegraded state and protected in perpetuity for the benefit of the public. Industrial, commercial and residential wastewater discharge (treated or untreated) and dredge and fill operations are prohibited except where clearly in the public interest.

We request clarification regarding the need for dredging the turning basin. In several places within the document, reference is made that the current entrance channel to the basin is maintained at a depth of 42 feet and that a nuclear powered aircraft carrier requires a depth of 50 feet plus an additional two foot overdredge. However, it is our understanding that for the last few weeks a nuclear powered aircraft carrier has been making a port call at Naval Station Mayport and has been berthed adjacent to one of the wharfs proposed for dredging and deepening. If this aircraft carrier is similar to those proposed for homeporting in the draft plan, we would like to better understand how it was able to enter the turning basin without the dredging being completed to achieve the required depth. (4)

Again, we appreciate the opportunity to comment and look forward to continued involvement in the project as it moves forward. If you have questions or require clarification regarding these comments, please feel free to contact our offices.

Sincerely,

Suzanne Lewis
Superintendent

cc: Kay Garner; ATSO
U.S. Fish and Wildlife Service

United States Department of the Interior
National Park Service
Jacksonville, Florida
Written Comments

RESPONSE

1. The Navy has evaluated the potential for archeological resources for all of NAVSTA Mayport. The Navy's Historic and Archeological Resources Protection (HARP) Plan for NAVSTA Mayport, prepared in 1994 by the U.S. Army Corps of Engineers - Mobile District, does not recommend further archeological study of the area of potential development. Most of the area of potential development described in the PEIS was created from fill material, and is mostly developed. No effect to cultural resources in the vicinity of proposed construction is anticipated; however, if evidence of historic or archeological resources are identified during construction, all work will stop and the Florida SHPO will be notified.

2. If the current approval for offshore dredged material disposal expires before the work takes place, the Navy will comply with future requirements for testing. Should upland disposal be considered further, additional study of potential upland disposal sites and potential mitigation will be performed. The USACE looked at all possible upland disposal sites, but none are being considered at this time.

3. Sections 3.1.4.3 Marine Waters and Section 4.1.1.4 Water Resources have been revised to include a discussion of Outstanding Florida Waters (OFW). The only anticipated potential impact would be minor turbidity impacts due to dredging, though no activities would occur directly in the OFW.

4. Although NIMITZ class aircraft carriers are able to safely transit the channel and turning basin at present, they do so only for temporary visits, and must be loaded significantly less than their full capacity in order to reduce their draft sufficiently to operate in the restricted depth of water. These limitations are acceptable for occasional visits by ships involved in their training process, but are not acceptable for a permanently homeported ship that must respond to real world tasking on short notice. The USS Stennis was able to access NAVSTA Mayport because it was down to 30 percent fuel, stores and ordnance were either unloaded or down to negligible amounts, and the carrier came in and left on high tides. Ideally, the ship would be able to transit the harbor while fully loaded at any tide level, but such capability would require dredging to -50 feet mllw for the length of the channel and turning basin. Homeporting an aircraft carrier requires the ability to move the ship in and out of port at any time, with a full load of personnel and supplies. It is this condition that will require deepening the entrance channels and turning basin.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
6620 Southpoint Drive, South
Suite 310
Jacksonville, Florida 32216-0912

IN REPLY REFER TO:

May 3, 1996

Commanding Officer, Southern Division
Naval Facilities Engineering Command
Attn: Ronnie Latimore
Code 064RL, P.O. Box 190010
North Charleston, SC 29419-9010

RE: Request for Review of Draft Programmatic Environmental Impact Statement on Potential Nuclear Aircraft Carrier Homeporting at Naval Station Mayport, Florida

FWS Log: 96-347F
Date: April 1, 1996
Agency: U.S. Navy
County: Duval

Dear Mr. Latimore:

This letter responds to the above request for U.S. Fish and Wildlife Service (Service) review and comment on the Draft Programmatic Environmental Impact Statement (DPEIS) concerning facilities development necessary to support a potential nuclear aircraft carrier homeporting at a naval base in Jacksonville, Florida. The Service has provided general comments as well as those submitted in accordance with Section 7 of the Endangered Species Act of 1973, as amended (Act)(16 U.S.C. 1531 *et seq.*). Since our review concluded that the greatest potential impacts to other fish and wildlife resources will occur during the proposed dredging phase, comments specific to the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*) will be submitted through the U.S. Army Corps of Engineers as input to any future Section 10 permit application under the Rivers and Harbors Act of 1899. (1)

The proposed development is on land and waters within Naval Station (NAVSTA) Mayport and coastal waters located at the mouth of the St. Johns River in S38, T1S, R29E. The proposal calls for construction and operation of new, land and water-based facilities over an area of up to 20 acres on the northeast and southeast ends of the NAVSTA turning basin. Additional work includes dredging and either upland or ocean disposal of approximately 5.7 million cubic yards of material from the turning basin and both NAVSTA and St. Johns River entrance channels. This work is necessary to accomodate the depth requirements, 50 feet below mllw plus two foot overdredge, of the nuclear aircraft carrier.

GENERAL COMMENTS

- In section 2.3, subsection 2.3.2, the second berthing alternative includes the development of a three-acre stormwater retention area adjacent to the turning basin. The DPEIS did not address the area's excavation and disposal requirements. Table 2-1, which indicates potential wetland issues associated with this alternative, appears to conflict with Figure 3-6, which does not depict any inland or coastal wetlands in the area. (2)

- In section 2.4, subsection 2.4.1.2, one of the citations (EPA, 1994) seems to have been omitted from the list of cited references. (3)

- According to section 2.4 and subsection 3.2.2.6, the sediment expected within the material dredged from areas of new work (clayey silt and clay) is much different than the existing bottom substrate (sand to sandy-silt) within the Ocean Dredged Material Disposal Site (ODMDS). Subsection 3.2.2.4 states that the benthic macroinfauna at the ODMDS are typical of unstable sandy environments. The disposal of different material than currently occurs within the ODMDS and at a much higher rate (ca. 6X) than the usual maintenance dredging, is bound to have significant, short and long term impacts on the benthic community. The size and extent of these potential impacts were not adequately addressed in subsection 4.1.2.2.4. (4)

- Section 2.4.1.2 did not provide an adequate description of the fourteen potential upland dredge disposal sites, some of which appear to occur within the National Park Service's Timucuan Ecological and Historical Preserve. It was also not clear whether one, some, or all of these new sites would be required for the proposed upland disposal. There was also no assessment of the impacts of new upland disposal on natural resources as described in section 4.1.2. (5)

- The following corrections should be made to Table 3-1: (6)

    - the C2 and C1 designations have been dropped by the Service; species previously designated C2 no longer have any official designation; C1's are now just referred to as candidates
    - add the hawksbill (*Eretmochelys imbricata*) and green (*Chelonia mydas*) sea turtles to the list; they will occassionally enter estuaries, especially green turtles
    - the staus of the bald eagle has been upgraded to threatened
    - the Arctic peregrine falcon (*Falco peregrinus tundrius*) is no longer listed; this is the subspecies most commonly observed on the Florida east coast during migration
    - delete " R" under status for the invertebrates, it is not an official Service symbol

ENDANGERED SPECIES ACT

The Navy determined that the proposed developments described in the DPEIS would not have an adverse impact on endangered and threatened species. The Service concurs with this assessment (7)

and strongly recommends that the following additional mitigation be incorporated into the Final PEIS in order to best protect the West Indian manatee, *Trichechus manatus latirostris*, from potential impacts during the channel and basin dredging operations. 1) Follow the standard manatee precautions as described in the attached document entitled "Standard Manatee Construction Conditions", March 27, 1995. 2) Temporarily install propeller guards on all vessels that are involved in the dredge and spoil disposal operations. These recommendations should also be incorporated in the future Section 10 dredging permit application.

Although this does not represent a biological opinion as described in Section 7 of the Act, it does fulfill the requirements of the Act and no further action is required. If modifications are made in the project or additional information becomes available on listed species, reinitiation of consultation may be required. This response does not apply to the endangered right whale, *Eubalaena glacialis*, which is under the jurisdiction of the National Marine Fisheries Service. (8) (9)

If you have any questions regarding this response, please contact Mr. John Milio at (904) 232-2580.

Sincerely yours,

Michael M. Bentzien

Michael M. Bentzien
Assistant Field Supervisor

Attachment:

cc: NPS, Fort Caroline
FL DEP
EPA, Atlanta

STANDARD MANATEE CONSTRUCTION CONDITIONS
27 MARCH 1995

The Lessee/grantee shall comply with the following manatee protection construction conditions:

a. The lessee/grantee shall instruct all personnel associated with the project of the potential presence of manatees and the need to avoid collisions with manatees. All construction personnel are responsible for observing water-related activities for the presence of manatee(s).

b. The lessee/grantee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act of 1972, The Endangered Species Act of 1973, and the Florida Manatee Sanctuary Act.

c. Siltation barriers shall be made of material in which manatees cannot become entangled, are properly secured, and are regularly monitored to avoid manatee entrapment. Barriers must not block manatee entry to or exist from essential habitat.

d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

e. If manatee(s) are seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure protection of the manatee. These precautions shall include the operation of all moving equipment no closer than 50 feet of a manatee. Operation of any equipment closer than 50 feet to a manatee shall necessitate immediate shutdown of that equipment. Activities will not resume until the manatee(s) has departed the project area of its own volition.

f. An collision with and/or injury to a manatee shall be reported immediately to the Florida Marine Patrol at 1-800-DIAL FMP (1-800-342-5367). Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-232-2580) for north Florida or Vero Beach (1-407-562-3909) in south Florida.

g. Temporary signs concerning manatees shall be posted prior to and during all construction/dredging activities. All signs are to be removed by the lessee/grantee upon completion of the project. A sign measuring at least 3 ft. by 4 ft. which reads *Caution: Manatee Area* will be posted in a location prominently visible to water related construction crews. A second sign should be posted if vessels are associated with the construction, and should be placed visible to the vessel operator. The second sign should be at least 81/2" by 11" which reads *Caution: Manatee Habitat. Idle speed is required if operating a vessel in the construction area. All equipment must be shutdown if a manatee comes within*

STANDARD MANATEE CONSTRUCTION CONDITIONS
(CONTINUED)

50 feet of operation. An collision with and/or injury to a manatee shall be reported immediately to the Florida Marine Patrol at 1-800-DIAL FMP (1-800-342-5367). The U.S. Fish and Wildlife Service should also be contacted in Jacksonville (1-904-232-2580) for north Florida or in Vero Beach (1-407-562-3909) for south Florida.

TEMPORARY MANATEE SIGNS

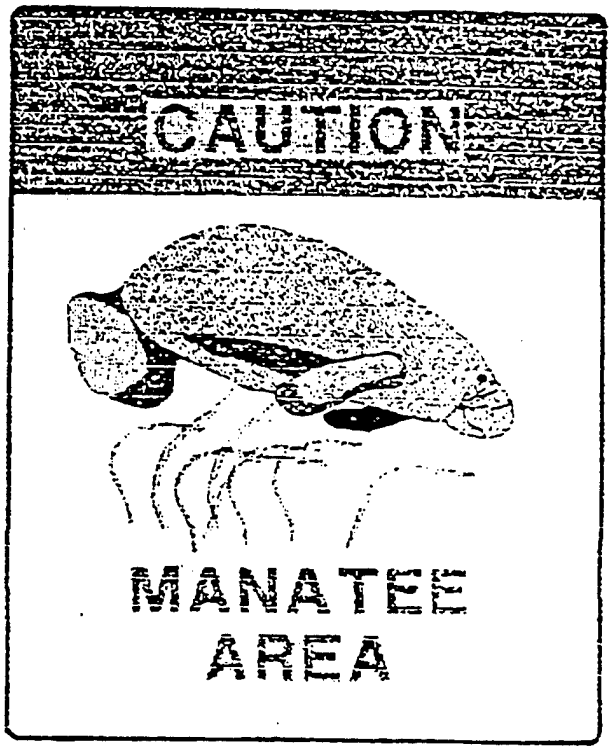
for standard manatee construction conditions

The *Caution: Manatee Area* signs are available through the companies listed below and may also be available from other local suppliers throughout the state. Permit/lease holders, should contact sign companies directly to arrange for shipping and billing.

Cape Coral Signs & Designs Inc.
1311 Del Prado Boulevard
Cape Coral, Florida 33990
1-800-813-9992
813-772-9992
FAX 813-772-9992

Municipal Supply and Sign Company
Post Office Box 17
Naples, Florida 33939-1765
1-800-329-5366
813-262-4639
FAX 813-262-4645

JADCO Signing Inc.
708 Commerce Way
Post Office Box 911
Jupiter, Florida 33458
1-800-432-3404
407-747-1065
FAX 407-744-2985



Caution Manatee Area

The second sign should be at least 8 1/2 inches by 11 inches, and should read:

Caution: Manatee Habitat. Idle speed is required if operating a vessel in the construction area. All equipment must be shutdown if a manatee comes within 50 feet of operation. An collision with and/or injury to a manatee shall be reported immediately to the Florida Marine Patrol at 1-800-DIAL FMP (1-800-342-5367). The U.S. Fish and Wildlife Service should also be contacted in Jacksonville (1-904-232-2580) for north Florida or in Vero Beach (1-407-562-3909) for south Florida.

An example is enclosed, and this example can be copied and used during construction activities.

CAUTION
MANATEE HABITAT

IDLE SPEED IS REQUIRED IF OPERATING A VESSEL IN THE CONSTRUCTION AREA.

ALL EQUIPMENT MUST BE SHUTDOWN IF A MANATEE COMES WITHIN 50 FEET OF OPERATION.

ANY COLLISION WITH AND/OR INJURY TO A MANATEE SHALL BE REPORTED IMMEDIATELY TO THE FLORIDA MARINE PATROL AT:

1-800-DIAL-FMP
(1-800-342-5367)

THE U.S. FISH AND WILDLIFE SERVICE SHOULD ALSO BE CONTACTED IN JACKSONVILLE (1-904-232-2580) FOR NORTH FLORIDA OR IN VERO BEACH (1-407-562-3909) FOR SOUTH FLORIDA

United States Department of Interior
Fish and Wildlife Service
Jacksonville, Florida
Written Comments

RESPONSE

1. Comment noted.

2. The quantity of material which would be excavated to create the stormwater retention basin will depend on whether it is designed as a dry or wet basin. This will not be determined until the preliminary design phase. If the material is suitable, it would be used for site fill or structural fill. Fill would be required to bring foundations of the proposed buildings above the floodplain.

3. The reference has been added to Section 9.0 References.

4. The potential dredging project would have significant long-term effects on benthos at the ODMDS site. Section 4.1.2.2.4 Benthos has been revised to include this evaluation.

5. The scope of the dredging study performed by the USACE was limited to identification of potential upland disposal sites, but no detailed information on sites was developed. The potential sites within the Timucuan Ecological and Historical Preserve were dismissed from consideration.

6. Table 3-1 has been corrected.

7. Navy would contract with the USACE for the dredging projects, and would comply with the requirements of all dredging permits, including endangered species protection measures.

8. Comment noted.

9. Comment noted. Navy has coordinated with the National Marine Fisheries Service (NMFS). Letter F-1 contains comments from NMFS.

UNITED STATES DEPARTMENT OF COMMERCE
Office of the Under Secretary for
Oceans and Atmosphere
Washington, D.C. 20230

May 6, 1996

Commanding Officer
Southern Division
Naval Facilities Engineering Command
Attn: Ronnie Lattimore, Code 064RL
P.O. Box 190010
North Charleston, SC 29419-9010

Dear Mr. Lattimore:

Enclosed are additional comments on the Draft Environmental Impact Statement for Evaluate Facilities Development Necessary to Support Potential Aircraft Carrier Homeporting at Naval Station Mayport, Florida. We hope our comments will assist you. Thank you for giving us an opportunity to review this document.

Sincerely,

Donna S. Wieting
Acting Director
Ecology and Conservation Office

Enclosure

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
National Geodetic Survey
Silver Spring, Maryland 20910-3282

MAY 2 1996

MEMORANDUM FOR: Donna Wieting
Acting Director, Ecology and Conservation Office

FROM: for Captain Lewis A. Lapine, NOAA
Director, National Geodetic Survey

SUBJECT: DEIS-9604-04--Evaluate Facilities Development Necessary to Support Potential Aircraft Carrier Homeporting at Naval Station Mayport, Florida

The subject statement has been reviewed within the areas of the National Geodetic Survey's (NGS) responsibility and expertise and in terms of the impact of the proposed actions on NGS activities and projects.

All available geodetic control information about horizontal and vertical geodetic control monuments in the subject area is contained on the NGS home page at the following Internet World Wide Web address: http://www.ngs.noaa.gov. After entering the NGS home page, please access the topic "NGS Products and Services" and then access the menu item "NGS Product." This menu item will allow you to directly access geodetic control monument information from the NGS data base for the subject area project. This information should be reviewed for identifying the location and designation of any geodetic control monuments that may be affected by the proposed project. (1)

If there are any planned activities which will disturb or destroy these monuments, NGS requires not less than 90 days' notification in advance of such activities in order to plan for their relocation. NGS recommends that funding for this project include the cost of any relocation(s) required. (2)

For further information about these monuments, please contact John Spencer; SSMC3, NOAA, N/NGS; 1315 East West Highway; Silver Spring, Maryland 20910; telephone: 301-713-3169; fax: 301-713-4175.

Attachments

National Oceanic and Atmospheric Administration
National Ocean Service
National Geodetic Survey
Silver Spring, Maryland
Written Comments

RESPONSE

1. A search of the National Geodetic Survey database identified 11 geodetic control monuments within approximately 1.2 miles of the area of potential construction at NAVSTA Mayport. None of the monuments are within the areas of dredging or construction, and therefore none should be affected. This search will be repeated prior to any future construction activity.

2. Navy will notify NGS in advance of any activity affecting monuments.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

May 10, 1996

4PM-FA/mh

Commanding Officer
Southern Division
Naval Facilities Engineering Command
P.O. box 190010
North Charleston, SC 29419-9010
Attn: Mr. Ronnie Lattimore, Code 064RL

SUBJECT: Draft Programmatic Environmental Impact Statement (DPEIS) to Evaluate Facilities Development Necessary to Support Potential Aircraft Carrier Homeporting at Naval Station (NAVSTA) Mayport, Florida

Dear Sir:

We have reviewed the subject document in accordance with Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. Public Law 102-484 requires the Navy to prepare a plan for developing NAVSTA Mayport as a homeport for Nimitz class (nuclear-powered) aircraft carriers (CVN), possibly by the year 2010. This DPEIS evaluates broad environmental impacts associated with various berthing and dredging alternatives. Dual capability at Wharves C-2 and F is the preferred alternative for berthing the CVN. Offshore disposal at the Jacksonville Ocean Dredged Material Disposal Site (ODMDS) is the preferred alternative for disposal of material dredged from the entrance channel and turning basin.

NEPA

- The analyses presented in the DPEIS are suitable for a broad programmatic document. As stated on page 1-1, the "DPEIS evaluates the issues to the maximum level of detail possible at this time." While many issues could have been more thoroughly evaluated (see comments below), it may not be appropriate for an action that will take place so far in the future. All issues should be addressed and updated in a tiered, or supplemental, NEPA document at the appropriate time. (1)

- The DPEIS states on page 4-29 that "Full compliance with NEPA will occur with filing of the FPEIS and signing of a Record of Decision." This section should be clarified to reflect that future NEPA documentation will be required for "full" compliance with NEPA. (2)

MISCELLANEOUS

- The heading for Section 4.4 Compliance with Various Land Use Policies and Controls, page 4-29, should be more appropriately headed Compliance with Various Environmental Laws. The Marine Protection, Research, and Sanctuaries Act of 1972, as amended, should be included in this section. (3)

- Section 4.5 Energy Requirements and Conservation Potential does not include any discussion of "Conservation Potential." (4)

WATER RESOURCES

- Section 2.4.1.2, Offshore Disposal, evaluates the potential use of the Jacksonville Ocean Dredged Material Disposal Site (ODMDS) for disposal of dredged material from required dredging for the proposed homeporting of a CVN. This section states that, the site is classified as a dispersion site and has unlimited capacity.

  This site has not been classified as a dispersive site. An upper limit of the amount of material disposed at this site has not been determined and no restrictions on the amount of material disposed at this site have been applied. However, the EIS designating the Jacksonville ODMDS (see reference below) determined that, significant long-term accumulation or mounding of dredged material has been detected at the existing site by high-resolution profiling at the disposal site conducted before and after disposal operations. Mounds containing a high percentage of consolidated fine material are not easily resuspended and may resist erosion. A 1978 study by Little and Young of the Naval Oceanographic Laboratory (see reference below) determined that significant shoaling of 9 feet (from a depth of 43 to 34 feet) occurred at the site during disposal of 2.9 million cubic yards of dredged material over a 15 month period from Mayport and the lower St. Johns River. (5)

  We are concerned with the possible site capacity effects of disposing of 5.7 million cubic yards of material associated with proposed homeporting. We are also concerned with the disposal of one million cubic yards of maintenance material every two years plus any additional increase in maintenance quantities due to the increase in basin and channel depth. (6)

Monitoring requirements as described in the Jacksonville ODMDS EIS require that bathymetric surveys of the disposal site be conducted. We recommend that in addition to pre- and post-bathymetric surveys, the Navy develop a plan to monitor bathymetric changes at the ODMDS during disposal to ensure that excessive mounding does not occur and to allow for modification of disposal within the site if it appears mounding problems will occur. (7)

EPA and the Jacksonville District Corps of Engineers are currently in the process of developing a Site Management and Monitoring Plan for the Jacksonville ODMDS. This plan will specifically address the issue of disposal of large quantities of dredged material. This plan will be available for the Navy's input prior to finalization. In addition, we feel that it would be appropriate for the Navy to examine the short-term capacity of the Jacksonville ODMDS in more detail. (8)

References:

U.S. Environmental Protection Agency. 1983 "Final EIS for Jacksonville Harbor, Florida, Ocean Dredged Material Disposal Site Designation." Washington, D.C.

Little, B.J., and D.K. Young. 1978. "Environmental Investigation of a Dredged Material Disposal Site near Mayport, Florida - Final Report." Oceanography Division, Naval Oceanographic Laboratory, Naval Ocean Research and Development Activity, NSTL Station, MS.

AIR QUALITY

- NAVSTA Mayport is located in Duval County, Florida. Duval County is an ozone air quality maintenance area and a plan has been developed demonstrating how the area will continue to maintain the ozone standard in the future. The proposed changes will cause an increase in emissions and the Navy must demonstrate that this increase does not adversely affect the maintenance plan. (9)

  The last paragraph on page 3-4 states that Jacksonville is an attainment area. Duval County is attaining the ozone standard, but it is a maintenance area. (10)

- The paragraph beginning on page 4-2 and ending on page 4-3 refers to a *de minimis* level for conformity. Even if this is a no-action level for making a conformity determination, these increases create a different emissions environment than that approved in the State Implementation Plan. The Navy will need to demonstrate that these increases will not adversely affect the Duval County plan. (11)

- The 100 ton/year *de minimis* level is for determining whether a conformity determination must be made. If the emissions are not *de minimis,* then any increase must be shown to be consistent with the emission budgets for volatile organic compounds and nitrogen oxides in the ozone maintenance plan for Duval County. (12)

- The vehicle emissions calculated in the first paragraph of page 4-5 were calculated using AP-42. More appropriately, the emission factors found in the Duval County Emissions Inventory should have been used. Moreover, EPA requires the use of the MOBILE 5a factors for determining conformity and demonstrating maintenance. Further, all other factors used in conformity determinations are available from Duval County. (13)

We rate this DPEIS "EC-2." That is, we have environmental concerns, particularly about ODMDS capacity and mounding effects, and impacts to the ozone maintenance area. The "2" part of the rating indicates that further information is requested to fully assess the impacts. If you have any questions concerning our comments, please contact Marion Hopkins at 404/347-3776 (extension 6849). (14)

Sincerely,

Heinz J. Mueller, Chief
Environmental Policy Section

United States Environmental Protection Agency
Region 4
Atlanta, Georgia
Written Comments

RESPONSE

1. Comment noted.

2. Section 4.4.1 has been revised to include this clarification.

3. The section title was developed based on Navy guidance for NEPA compliance (OPNAVINST 5090.1B), which specifies evaluation of project compliance with "...federal, state, and local land use plans, policies, and controls ... ". To alleviate confusion, and because the section discusses more than environmental laws, it has been retitled "Compliance with Plans, Policies, and Controls". Section 4.4.19 Marine Protection, Research, and Sanctuaries Act of 1972 has been added to the compliance section.

4. Section 4.5 ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL has been revised to include a general discussion of energy conservation.

5.-8. This PEIS evaluates the potential dredging and dredged material disposal impacts based on currently available information. The programmatic nature of the EIS requires that additional studies be performed to evaluate some issues. The issues raised regarding the ODMDS site (dispersive, capacity, bathymetric monitoring) may need to be investigated further if the dredging project is proposed. The Navy will also work with EPA, USAE, and the State of Florida on the Site Management and Monitoring Plan for the ODMDS. This study will begin later this year, and will address these issues.

9. The Navy will prepare a detailed air quality analysis if the project is proposed, to comply with the requirements of the Clean Air Act and the 1993 General Conformity Rule.

10. Section 3.1.2.2 Air Quality has been revised.

11. The level of effort for air quality analysis in this PEIS is not sufficient to perform a detailed study. Navy does commit to doing detailed analysis at a later time, if the dredging project, or other major project is proposed, and is aware that emissions increases can not adversely affect the Duval County maintenance plan.

12. See Response 8.

United States Environmental Protection Agency
Region 4
Atlanta, Georgia
Written Comments

RESPONSE

13. Section 4.1.1.2.3 Operations-Related Emissions has been revised. The Duval County MOBILE 5a emission factors are used for vehicle emissions.

14. Comment noted.

United States Department of the Interior

OFFICE OF THE SECRETARY
OFFICE OF ENVIRONMENTAL POLICY AND COMPLIANCE
Richard B. Russell Federal Building
75 Spring Street, S.W.
Atlanta, Georgia 30303

May 13, 1996

ER-96/242

Commanding Officer, Southern Division
Naval Facilities Engineering Command
ATTN: Ronnie Latimore
Code 064RL, P.O. Box 190010
North Charleston, SC 29419-9010

Dear Mr. Latimore:

The Department of the Interior has completed it's review of the Draft Programmatic Environmental Impact Statement (DPEIS) for facilities development necessary to support a potential nuclear aircraft carrier homeporting at Naval Station Mayport, Florida.

General Comments (1)

A portion of Naval Station Mayport is included within the boundaries of the Timucuan Ecological and Historic Preserve, a unit of the National Park Service system. The greatest potential impacts to fish and wildlife resources will occur during the proposed dredging phase. The Fish and Wildlife Service plans to comment more specifically through the U.S. Army Corps of Engineers pursuant to any future Section 10 permit application under the Rivers and Harbors Act of 1899.

The potential exists for cultural resources to be present in the areas proposed for on-shore development. The two cultural sites identified on the west side of the turning basin, referenced on page 3-9, were investigated by the National Park Service, with the approval of the Navy, in 1991 as a part of overall archeological investigations for the Timucuan Preserve. As other sites may be present in the area, we encourage the Navy to complete an archeological survey and testing of on-shore development sites prior to construction.

We support the option of off-shore disposal of dredged materials from the turning basin, with the understanding that periodic samples of materials will continue to meet EPA standards and that continued concurrence with EPA will be sought when the current agreement expires in March 1997. Should upland disposal be considered, the National Park Service requests additional information on the proposed disposal sites identified in Figure 2-7. It is difficult to determine the scale in this figure, but it would appear that at least five (5), and perhaps as many as eight, (8) of the proposed upland disposal sites would be within the

boundaries of the Timucuan Ecological and Historic Preserve. The National Park Service is also interested in what concepts the Navy has explored for mitigation should upland disposal be utilized.

We could not find any indication in the document where potential impacts to Outstanding Florida Waters have been addressed. All waters within the Timucuan Preserve are designated as Outstanding Florida Waters. While the turning basin is outside of Preserve boundaries, the legislated boundary crosses the St. Johns River just upstream from the basin and continues across the river following the shoreline of Huguenot Park. According to Sec. 403.061 (27), Florida statues, Outstanding Florida Waters are to be preserved in a nondegraded state and protected in perpetuity for the benefit of the public. Industrial, commercial and residential wastewater discharge (treated or untreated) and dredge and fill operations are prohibited except where clearly in the public interest.

We request clarification regarding the need for dredging the turning basin. In several places within the document, reference is made that the current entrance channel to the basin is maintained at a depth of 42 feet, and that a nuclear powered aircraft carrier requires a depth of 50 feet plus an additional two foot overdredge. However, it is our understanding that for the last few weeks a nuclear powered aircraft carrier has been making a port call at Naval Station Mayport, and has been berthed adjacent to one of the wharfs proposed for dredging and deepening. If this aircraft carrier is similar to those proposed for homeporting in the draft plan, we would like to better understand how it was able to enter the turning basin without the dredging being completed to achieve the required depth.

Specific Comments

(2)

In Section 2.3, subsection 2.3.2, the second berthing alternative includes the development of a three-acre storm water retention area adjacent to the turning basin. The DPEIS did not address the area's excavation and disposal requirements. Table 2-1, which indicates potential wetland issues associated with this alternative, appears to conflict with Figure 3-6, which does not depict any inland or coastal wetlands in the area.

In Section 2.4, subsection 2.4.1.2, one of the citations (EPA, 1994) seems to have been omitted from the list of cited references.

According to Section 2.4 and subsection 3.2.2.6, the sediment expected within the material dredged from areas of new work (clayey silt and clay) is much different than the existing bottom substrate

(sand to sandy-silt) within the Ocean Dredged Material Disposal Site (ODMDS).

It is stated in subsection 3.2.2.4 that the benthic macroinfauna at the ODMDS are typical of unstable sandy environments. The disposal of different material than currently occurs within the ODMDS and at a much higher rate (ca. 6X) than the usual maintenance dredging, is bound to have significant, short and long term impacts on the benthic community. The size and extent of these potential impacts were not adequately addressed in subsection 4.1.2.2.4.

Section 2.4.1.2 did not provide an adequate description of the fourteen potential upland dredge disposal sites, some of which appear to occur within the National Park Service's Timucuan Ecological and Historical Preserve. It was also not clear whether one, some, or all of these new sites would be required for the proposed upland disposal. There was also no assessment of the impacts of new upland disposal on natural resources as described in Section 4.1.2.

The designations C1 and C2 are no longer used by the Service. Species previously designated as C2 no longer have any official designation and C1 species are now referred to as "candidates."

The following corrections should be made to Table 3-1:

1. The hawksbill (*Eretmochelys imbricata*) and green (*Chelonia mydas*) sea turtles should be added to the list. Both species may occasionally enter estuaries.

2. The status of the bald eagle has been changed to threatened.

3. The Arctic peregrine falcon (*Falco peregrinus tundrius*) is no longer listed. *F. p. peregrinus* is the subspecies most commonly observed on the east coast of Florida during migration.

4. To avoid confusion " R" under status for the invertebrates, should be deleted since this is not an official Service symbol.

Endangered Species

The Navy determined that the proposed developments described in the DPEIS would not have an adverse impact on endangered and threatened species. The Service concurs with this assessment and strongly recommends that the following additional mitigation be incorporated into the Final PEIS in order to assure protection of the West Indian manatee, *Trichechus manatus latirostris*, from potential impacts during the channel and basin dredging operations:

1. Follow the standard manatee precautions as described in the "Standard Manatee Construction Conditions", March 27, 1995,

provided to you by the Jacksonville Field Office of the Fish and Wildlife Service.

2. Temporarily install propeller guards on all vessels that are involved in the dredge and spoil disposal operations. These recommendations should also be incorporated in the future Section 10 dredging permit application.

Although this does not represent a biological opinion as described in Section 7 of the Act, it does fulfill the requirements of the Act and no further action is required. If modifications are made in the project or additional information becomes available on listed species, re-initiation of consultation may be required. This response does not apply to the endangered right whale, *Eubalaena glacialis*, which is under the jurisdiction of the National Marine Fisheries Service.

If you have any questions regarding fish and wildlife resources, please contact Mr. Jon Andrew at (404) 679-7123 or Mr. John Milio at (904) 232-2580. If there are questions regarding the Timucuan Ecological and Historic Preserve, please contact Suzanne Lewis at 904/221-5688.

Thank you for the opportunity to review and provide comments on the draft Programmatic EIS.

Sincerely yours,

James H. Lee,
Regional Environmental Officer

United States Department of Interior
Office of Environmental Policy and Compliance
Written Comments

RESPONSE

1. The "General Comments" were responded to in the responses to Letter F-2.

2. Letter F-3 addresses the remaining comments in this letter.

STATE OF FLORIDA
DEPARTMENT OF COMMUNITY AFFAIRS

EMERGENCY MANAGEMENT • HOUSING AND COMMUNITY DEVELOPMENT • RESOURCE PLANNING AND MANAGEMENT

LAWTON CHILES
Governor

JAMES F. MURLEY
Secretary

May 21,1996

Mr. Ronnie Lattimore
Department of the Navy, Southern Division
Naval Facilities Engineering Command
Post Office Box 190010
North Charleston, South Carolina 29419-9010

RE: Construction of Facilities and Operations - Draft Programmatic Environmental Impact Statement - Facilities Development Necessary To Support Potential Aircraft Carrier Homeporting - Naval Station - Mayport, Florida
SAI: FL9603200169C

Dear Mr. Lattimore:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated a review of the above-referenced project.

The St. Johns River Water Management District (SJRWMD) indicates that permits will be required prior to the start of construction. Sound development practices should be maintained during all construction. Early coordination with the SJRWMD's Jacksonville Service Center may help to eliminate problems in the permitting process. The SJRWMD has also provided specific comments regarding the referenced document. Please refer to the enclosed SJRWMD comments. (1)

The Department of Environmental Protection (DEP) indicates that in general the Draft Programmatic Environmental Impact Statement (DPEIS) addresses the numerous environmental issues and potential impacts associated with homeporting the proposed nuclear aircraft carrier at Mayport. DEP also offers specific comments and recommendations on the DPEIS, the protection of (2)

2740 CENTERVIEW DRIVE • TALLAHASSEE, FLORIDA 32399-2100

FLORIDA KEYS AREA OF CRITICAL STATE CONCERN
FIELD OFFICE
2796 Overseas Highway, Suite 212
Marathon, Florida 33050-2227

SOUTH FLORIDA RECOVERY OFFICE
P.O. Box 4022
8600 N.W. 36th Street
Miami, Florida 33159-4022

GREEN SWAMP AREA OF CRITICAL STATE CONCERN
FIELD OFFICE
155 East Summerlin
Bartow, Florida 33830-4641

manatees, right whales and marine turtles, and air quality protection measures. The DEP notes that the DPEIS does not include any discussion of the presence of adjacent areas managed by the DEP and the City of Jacksonville which may be affected by the development of the proposed facilities at Mayport. The DPEIS should be revised to provide details on the proposed dredged material disposal plans, including the relocation, disposal, or use of the existing spoil within the project area; and to correct the inaccuracies identified by the DEP. In addition, the DEP notes that an Environmental Resource Permit will be required. In conclusion, the DEP has expressed an interest in working with the Navy if Mayport is selected as the homeport. Please refer to the enclosed DEP comments.

Based on the information contained in the Draft Programmatic Environmental Impact Statement and the enclosed comments provided by our reviewing agencies, the state has determined that the above-referenced project is consistent with the Florida Coastal Management Program. (3)

Thank you for the opportunity to review this project. If you have any questions regarding this letter, please contact Ms. Keri Akers, Clearinghouse Coordinator, or Ms. Jasmin Raffington, Florida Coastal Management Program, at (904) 922-5438.

Sincerely,

G. Steven Pfeiffer
Assistant Secretary

GSP/cc

Enclosures

cc: Margaret Spontak, St. Johns River Water Management District
Dan Pennington, Department of Environmental Protection

Florida State Clearinghouse
Department of Community Affairs
Tallahassee, Florida
Written Comments

RESPONSE

1. See letter S-3 for responses.

2. See letter S-2 for responses.

3. Comment noted.

Department of Environmental Protection

Lawton Chiles
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Virginia B. Wetherell
Secretary

May 1, 1996

Keri Akers
Department of Community Affairs
Suite 305
2740 Centerview Drive
Tallahassee, Florida 32399-2100

Re: SAI # FL9603200169C, Draft Programmatic Environmental Impact Statement (DPEIS) - Facility Development Necessary to Support Potential Aircraft Carrier Homeporting - Mayport Station, Duval County

Dear Ms. Akers:

The applicant proposes to improve the facilities at the Naval Station at Mayport in order to homeport a Nimitz class aircraft carrier. This type of aircraft carrier is larger, with a deeper draft than vessels currently using this facility, and is nuclear powered. In order to accommodate this size vessel the applicant proposes to dredge the Mayport basin and entrance channel, the entrance channel to Jacksonville Harbor and the St. Johns Bar Cut Range to 52 feet below mllw. In addition wharves under consideration for berthing the new carrier must be improved in a variety of ways, including alterations to the existing wharves design. Currently at this site, 23 ships are homeported at 15 wharves located around the perimeter of the basin. The basin is approximately 2000 ft. by 3000 ft. in size and is connected to the St. Johns River by a 500 ft. wide entrance channel. The basin depth is approximately 42 ft. mllw. Four options are being evaluated for sediment disposal.

In general the DPEIS addresses the numerous environmental issues and potential impacts that would be associated with homeporting the proposed nuclear aircraft carrier at Mayport. Specific comments and recommendations on the DPEIS are provided below:

A. Although the DPEIS includes a section entitled "3.3.6 Aesthetics" beginning on page 3- 25 and one entitled "3.3.7 Land Use" beginning on page 3-26, the DPEIS fails to mention the presence of adjacent areas managed by the Department of Environmental Protection (DEP) and the City of Jacksonville. The DEP manages the Talbot Islands GEOpark which includes Little Talbot Island State Park, Big Talbot Island State Park, (1)

S-2

natural, cultural and recreational lands located in the area which could be affected by the development of the proposed facilities at Mayport.

B. Under section "4.1.2.1, Terrestrial Systems", beginning on page 4-7 and under section "4.1.2.1.2 Inland Wetlands" subsection "Dredging" on page 4-9, the DPEIS mentions the potential for upland dredge disposal at existing inland disposal sites located within the naval station. However, since these sites are currently full, the sites could not be utilized without the prior removal of the existing spoils. In order to identify these sites as potential spoil disposal areas for the referenced project, the DPEIS should provide details about the proposed relocation, disposal, or use of the existing spoils contained in the areas. (2)

C. On page 1-4, **PERMIT AND COORDINATION REQUIREMENTS,** it should be noted that an Environmental Resources Permit (formerly a dredge and fill permit) will also be needed from the DEP. (3)

Protected Species

D. Information which should be noted: Manatees - Two hundred and two manatees are known to have died in the waters of Duval County between January 1974 and January 1996. Sixty eight of these mortalities occurred as a result of watercraft collisions. Nine watercraft-related mortalities have occurred within the approximate boaters' sphere of influence for the proposed project (~5 miles). Six of the carcasses were recovered within one mile of the project site and three of the carcasses were recovered in the Mayport basin on the Naval Station. Since manatees and boaters both use these waters, the probability of boat/manatee collisions increases with increased boat traffic. Watercraft-related manatee deaths outnumber all other human-caused impacts to manatees. Manatees have a low reproductive potential; consequently, the continued existence of this species is jeopardized by significant increases in mortality.

Right Whales - Forty two right whale mortalities have been documented along the eastern seaboard since 1970, 17 of these (40%) have occurred in the Florida/Georgia region. Three of the 17 were attributed to vessel collisions, but many of the animals either were never necropsied or the necropsy was incomplete and, therefore this number may be an underestimate. There have been at least 5 right whale carcasses recovered from the south Georgia/north Florida area from January through March 1996. Of those, one was determined to be caused by a vessel collision. In 1995 no right whale carcasses were recovered for the same area. Seven percent of the population exhibit scars indicative of additional, non-lethal vessel interactions.

The channel dredging and one of the sediment disposal options proposed for this project and the resulting increase in regular (4)

ship traffic, will increase risks of vessel collisions with right whales due to increases in traffic generated by these additional activities. The nearshore waters of northeast Florida and southern Georgia were formally designated as critical habitat for right whales on June 3, 1994. These waters are used predominately as calving and nursery areas annually from December to March.

Marine Turtles - The National Marine Fisheries Service (NMFS) indicates that hopper dredging activities in the southeastern U.S. may adversely affect the endangered Kemp's ridley and the Florida green turtles and the threatened loggerhead turtle. Past maintenance dredging in this area has been demonstrated to adversely affect sea turtles. Takes of 225 sea turtles have been documented since 1980 in channels of the southeast U.S., including 22 turtles that were alive when found. The implementation of protective measures and seasonal restrictions on hopper dredge activities since 1991, has greatly reduced the rate of sea turtle takes by hopper dredges. Only 14 sea turtle takes have been documented in hopper dredges since 1991.

E. In reviewing this document we noted various inaccuracies that should be corrected. The following lists those items.

1. On page iii, under BIOLOGICAL RESOURCES, in the last sentence it indicates that threatened and endangered species will not be affected by construction, dredging or facilities operations. This statement appears to be incorrect based on data we have available for manatees, marine turtles and right whales. (5)

2. On page 2-10, **Dredged Material Disposal Alternatives**, the method of disposal is a very important issue when considering the various protected marine species. Please inform us of the method which will ultimately be used. (6)

3. On page 3-19, 3.2.2.9 **Threatened and Endangered Species**, in the last sentence of the third paragraph, the nesting season for loggerhead turtles is incorrect. The nesting season lasts from May through October in this region of Florida. In addition, the use of inshore and nearshore habitat in this region by Leatherback, Kemp's Ridley and Green turtles needs to be added. (7)

4. On page 3-21, at the top of the page, "Persistent threats to manatees .....", should be revised to include manatee mortalities due to direct vessels impacts. Vessel related manatee mortalities are approximately evenly divided between propeller caused and hull impacts. Severe hull impacts can cause critical internal injuries and large vessels can crush manatees on the bottom (8)

of the waterway or against a wharf or seawall.

5. On page 4-6, 4.1.1.4 Water Resources, under Facility Operations, thermal discharges from the ship are noted . On Table 4-4 steam output is listed as 7,000 pounds per hour. Please provide more information about the thermal discharge from the ship. Is this output continuous? If not please provide details about the frequency of discharge, length of the discharge duration and any other details that would describe these thermal discharges. Do ships already existing at this facility have thermal discharges, or is this a new aspect of the Nimitz class aircraft carrier? (9)

6. On page 4-15, 4.1.2.3 Threatened and Endangered Species, Facility Operations, appropriate fenders should also be installed and maintained on wharves where vessels are moored. (10)

7. In the same section as above, under Dredging, the statement that manatees will avoid dredging areas because of the high level of activity and turbid water, is incorrect. (11)
Manatees can sometimes be attracted to dredging activities, particularly clam shell dredging.

8. On page 4-36, 4.8.2 **Biological Resources**, The statement that construction and operation of the facility would not impact any threatened and endangered species, seems broad and inaccurate. If appropriate protective measures are implemented during construction and operation, impacts should be minimized. Once the project design is finalized the required permits can be conditioned with the appropriate protective measures. (12)

F. Based on the information available, the following **preliminary** measures are considered necessary in order for this project to not significantly affect the conservation of wildlife: (13)

1. All wharves mooring vessels of 100 feet in length or greater must have a fender system providing at least 4 ft. standoff under maximum compression, between the wharf and the vessel and between rafted vessels;

2. The standard manatee construction conditions are followed for all in-water construction;

3. Manatee caution signs and/or information displays are installed and maintained;

4. The NMFS requirements for dredging and the

Bureau of Protected Species Management and U.S.Fish & Wildlife Service requirements for sediment disposal activities in sea turtle habitat should be implemented; and,

5. The recommendations of the Southeastern U.S. Implementation Team for Right Whales, including the Early Warning System, should be implemented.

The conclusion of this biological opinion is based on the information available during review. If new information reveals impacts to protected species and/or their habitat that is not considered in this opinion, this biological opinion may be revised. Due to the importance of this region to several protected species, please keep us informed on the status of this project. Do not hesitate to call our Bureau of Protected Species Management if you have any questions regarding manatees or right whales or marine turtles (904-922-4330).

G. Air Quality Concerns

As previously noted, the proposed action would replace the current conventional class carrier homeported at Mayport with nuclear-powered Nimitz class, which has a larger crew and other increases in support activities that would produce an overall increase in emissions. The DPEIS recognizes that some activities will require FDEP permits (air and others), and that the Mayport facility is currently applying for its Title V operating permit.

Section 4.1.1.2 (page 4-2) addresses emissions from all operational sources and subsequent subparagraphs break sources into three major categories: Construction-related Emissions, Dredging-related Emissions and Operations-related Emissions.

Construction-Related Emissions: A one-year time period for construction activities was analyzed for NOx and VOC emissions. Emissions during the year evaluated are estimated to be 33.5 tons NOx and 3.2 tons of VOC (AP-42 emission factors).

Annual Dredging-Related Emissions: The estimated maximum annual dredging emissions are 366.7 tons NOx and 19.9 tons VOC. Because these emissions would continue into the future, and the source is a new source, and the NOx emissions exceed the General Conformity de minimis limits of 100 tons per year, a conformity determination would be required.

Operations-related Emissions: Although the document does not clearly state if the Maintenance Facility emissions are new emissions (versus continuation of current activities), it is assumed these are new emissions. Annual VOC emissions are estimated to be equal to or less then 25 tons. NOx emissions are estimated to be near zero. Vessel Emission are estimated to increase by 4.75 tons of NOx and less then 0.1 ton of VOC. Vehicular Emissions increase (due to the increased size of the (14)

crew and dependent and maintenance personnel populations) are estimated at 0.54 tons NOx and 0.22 tons of VOC. This vehicle emissions estimate is questionable because of the emissions factors used. The 1987 AP-42 emission factors were used, not the current version of EPA's MOBILE model. Use of the MOBILE5a emission factors will yield a result of approximately 10 times larger for each. (15)

Summary: Section 4.1.1.2.4 (page 4-5) summarizes the analysis and concludes that the annual dredging operations is the only new source that will cause NOx emissions to exceed the federal de minimis limits of 100 tons per year. Therefore, if the decision is made to homeport the Nimitz Class Aircraft Carrier at Mayport, a comprehensive air quality analysis would be required to comply with the General Conformity regulations. Such an analysis is outside the scope of this DPEIS and will be addressed if and when required. (16)

We appreciate the opportunity to comment on this proposed project, and would like to work with the Navy if Mayport is selected as the homeport. If you have any questions please call me at (904) 487-2231.

Cordially,

Dan Pennington
Office of Intergovernmental Programs

DP

cc: Jan Brewer, DEP Northeast District Office
Margaret Spontak, SJRWMD
Torrey Johnson, Bureau Chief, Parks District 2
Mickey Bryant, FDEP
Robert Joseph, Park Manager, Talbot Islands GEOpark
USFWS-Jacksonville
Ron Mezich
Howard Rhodes, Director Division of Air Resource Management

Department of Environmental Protection
State of Florida
Tallahassee, Florida
Written Comments

RESPONSE

1. The sections referenced in the comment have been revised. No impacts to these resources are anticipated.

2. The upland sites at NAVSTA Mayport were initially considered as options for dredged material disposal, but were not carried forward for detailed analysis.

3. Section 1.6 PERMIT AND COORDINATION REQUIREMENTS has been revised to include the Environmental Resources Permit.

4. Increased vessel traffic does increase risk, but use of the mitigative measures such as fenders, signs, education programs, and others discussed in Section 4.1.2.3 Threatened and Endangered Species will minimize the risk. Dredging will occur during approved months. The carrier will not cause additional ship traffic when homeported, since it would be a replacement for a conventional carrier.

5. No adverse impact is expected to threatened and endangered species. The U.S. Fish and Wildlife Service concurs with this assessment (See Comment 7 of Letter F-3).

6. Clamshell dredging, with barge transport of dredged material to the disposal site, would be the preferred dredging method for the Mayport Turning Basin. The basin is not suitable for work by a hopper dredge due to vessel traffic and basin size. Hopper dredging (with transport to the disposal site on the dredge) or clamshell dredging with barge transport, could be utilized for the entrance channels. The USAE estimated that hopper dredging would be lower in cost, and would be preferable on a cost basis for the areas where it could be used (USAE, 1994a).

7. Section 3.2.2.9 has been revised accordingly.

8. Section 3.2.2.9 has been revised accordingly.

9. The 7,000 lbs/hr of steam referenced in Table 4-4 is a ship's utility requirement and is not a thermal discharge amount. This steam is used for hotel services, heating, hot water, etc. Thermal discharge, as it relates to the ship, is generated from cooling water/sea water that is discharged overboard. Fresh water or sea water is used in heat exchangers and condensers for cooling purposes, creating a thermal discharge when sent overboard. Navy has studied the thermal discharges from the existing homeported CV's and the proposed CVN's and has found no significant differences between these two vessels.

Department of Environmental Protection
State of Florida
Tallahassee, Florida
Written Comments

RESPONSE

10. NAVSTA Mayport uses 4-foot diameter foam fenders at Wharf C-2 and Wharf F, where the carrier would be berthed. Section 4.1.2.3 Threatened and Endangered Species has been revised to include this information.

11. The statement referred to has been deleted.

12. No impacts to threatened and endangered species are anticipated. The Navy would continue to use protective measures during operations, and will comply with all permit requirements.

13. NAVSTA Mayport uses 4-foot diameter foam-filled fenders between ships and wharfs, and between nested ships. Standard manatee protective measures are used at all times at the naval station. The Navy will comply with all permit requirements.

14. The maintenance facility would be a new facility, and would generate new emissions, which would be included in the NAVSTA Mayport emissions inventory. All required permits would be obtained.

15. Section 4.1.1.2.3 Operations-Related Emissions has been revised. The Duval County MOBILE 5a emission factors are used for vehicle emissions.

16. A comprehensive air quality analysis would be undertaken if, and when, a proposal is made to proceed with the dredging or construction activities necessary for CVN homeporting. At this first stage of the programmatic study, preliminary estimates show that a conformity determination would be required for the dredging project.

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

Henry Dean, Executive Director
John R. Wehle, Assistant Executive Director
Charles T. Myers III, Deputy Assistant Executive Director

POST OFFICE BOX 1429 PALATKA, FLORIDA 32178-1429
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TDD 904-329-4450 TDD SUNCOM 860-4450
FAX (EXECUTIVE/LEGAL) 329-4125 (PERMITTING) 329-4315 (ADMINISTRATION/FINANCE) 329-4508

SERVICE CENTERS

618 E. South Street
Orlando, Florida 32801
407-897-4300
TDD 407-897-5960

7775 Baymeadows Way
Suite 102
Jacksonville, Florida 32256
904-730-6270
TDD 904-730-7900

PERMITTING
305 East Drive
Melbourne, Florida 32904
407-984-4940
TDD 407-727-5368

OPERATIONS
2133 N. Wickham Road
Melbourne, Florida 32935-8109
407-254-1762
TDD 407-253-1203

April 22, 1996

Ms. Keri Akers
Florida State Clearinghouse
Department of Community Affairs
2740 Centerview Drive
Tallahassee, FL 32399-2100

Re: SAI #: FL9603200169C
Name of Project: Draft Programmatic Environmental Impact Statement - Facilities Development Necessary to Support Potential Aircraft Carrier Homeporting - Naval Station Mayport, Duval County, Florida.

Dear Ms. Akers:

The staff of the St. Johns River Water Management District (SJRWMD) has reviewed the above referenced project and offers the following comments.

For information regarding permitting for the construction and dredging activities, the applicant should contact the Jacksonville Service Center (904-730-6270). (1)

The following are minor editorial comments concerning the report.

Pg. 2-3 - Sec. 2.2.2.2. states the current "base loading at 13, 407," while pg.3-24 uses the figure "13,403." Also, although this section makes comparisons between 1987 and 1995, the number of ships currently berthed is not stated until pg. 3-24. (2)

The term "cold iron" is used on pgs. 4-6 and 21, but not explained in either place. (3)

This letter does not constitute or substitute for a permit review. Permit reviews require more specific information.

If you have any questions or if I can be of further assistance, please contact me at (904) 329-4374.

Sincerely,

Margaret W. Spontak

Margaret Spontak, Director
Division of Policy and Planning

MS/REG/ch

COUNTY: Duval

DATE: 03/21/96
COMMENT DUE DATE: 04/04/96
CLEARANCE DUE DATE: 05/03/96
SAI#: FL9603200169C

STATE AGENCIES	LOCAL/OTHER	OPB POLICY UNITS
__ Community Affairs __ Environmental Protection __ Marine Fisheries Commission __ State __ Transportation	X St. Johns River WMD	__ Environmental Policy/C & ED

RECEIVED
APR 24 1996
State of Florida Clearinghouse

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evalutation and is categorized as one of the following:

___ Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.

_X_ Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.

___ Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.

___ Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

Project Description:

Draft Programmatic Environmental Impact Statement - Facilities Development Necessary To Support Potential Aircraft Carrier Homeporting - Naval Station Mayport, Florida.

To: **Florida State Clearinghouse**
Department of Community Affairs
2740 Centerview Drive
Tallahassee, FL 32399-2100
(904) 922-5438 (SC 292-5438)
(904) 487-2899 (FAX)

EO. 12372/NEPA

☐ No Comment
☐ Comments Attached
☐ Not Applicable

Federal Consistency

☐ No Comment/Consistent
☐ Consistent/Comments Attached
☐ Inconsistent/Comments Attached
☐ Not Applicable

S-3

From:
Division/Bureau: Division of Policy and Planning MHS.
Reviewer: Margaret H. Spontak, Director
Date: April 22, 1996

St. Johns River Water Management District
Palatka, Florida
Written Comments

RESPONSE

1. Comment noted.

2. The correct number is 13,407. Section 2.2.2.2 Shore Facility Requirements has been revised to include information on the number of homeported ships.

3. Cold iron is a term used to describe the condition of a ship when all shipboard boilers, engines, and generators are inoperative during repairs and can furnish none of the required ships services. The first discussion of "cold iron" in Section 4.1.1.4 Water Resources has been revised to include this explanation.

COUNTY: Duval

DATE: 03/21/96
COMMENT DUE DATE: 04/04/96
CLEARANCE DUE DATE: 05/03/96
SAI#: FL9603200169C

STATE AGENCIES	LOCAL/OTHER	OPB POLICY UNITS
__ Community Affairs __ Environmental Protection X Marine Fisheries Commission __ State __ Transportation	__ St. Johns River WMD	__ Environmental Policy/C & ED

RECEIVED
MAR 22 1996
MARINE FISHERIES COMMISSION

RECEIVED
MAR 26 1996
State of Florida Clearinghouse

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evalutation and is categorized as one of the following:

___ Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.

_X_ Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.

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___ Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

Project Description:

Draft Programmatic Environmental Impact Statement - Facilities Development Necessary To Support Potential Aircraft Carrier Homeporting - Naval Station Mayport, Florida.

To: **Florida State Clearinghouse**
Department of Community Affairs
2740 Centerview Drive
Tallahassee, FL 32399-2100
(904) 922-5438 (SC 292-5438)
(904) 487-2899 (FAX)

EO. 12372/NEPA

☐ No Comment
☐ Comments Attached
☐ Not Applicable

Federal Consistency

☐ No Comment/Consistent
☐ Consistent/Comments Attached
☐ Inconsistent/Comments Attached
☒ Not Applicable

S-4

From:
MARINE FISHERIES COMMISSION
2540 EXECUTIVE CENTER CIRCLE WEST
SUITE 106
TALLAHASSEE, FLORIDA 32301

Division/Bureau: _____

Reviewer: _____

Date: 3-22-96

Marine Fisheries Commission
State of Florida
Tallahassee, Florida
Written Comments

No response required.

COUNTY: Duval

DATE: 03/21/96
COMMENT DUE DATE: 04/04/96
CLEARANCE DUE DATE: 05/03/96
SAI#: FL9603200169C

STATE AGENCIES	LOCAL/OTHER	OPB POLICY UNITS
__ Community Affairs __ Environmental Protection __ Marine Fisheries Commission X State __ Transportation	__ St. Johns River WMD SEE BASE SURVEYED	__ Environmental Policy/C & ED DUVAL SAI-EIS-NAV4-MNA 961220 xref: 910167

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APR 09 1996
State of Florida Clearinghouse

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evalutation and is categorized as one of the following:

___ Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.

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___ Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

Project Description:

Draft Programmatic Environmental Impact Statement - Facilities Development Necessary To Support Potential Aircraft Carrier Homeporting - Naval Station Mayport, Florida.

To: **Florida State Clearinghouse**
Department of Community Affairs
2740 Centerview Drive
Tallahassee, FL 32399-2100
(904) 922-5438 (SC 292-5438)
(904) 487-2899 (FAX)

EO. 12372/NEPA

- [x] No Comment
- [ ] Comments Attached
- [ ] Not Applicable

Federal Consistency

- [x] No Comment/Consistent
- [ ] Consistent/Comments Attached
- [ ] Inconsistent/Comments Attached
- [ ] Not Applicable

S-5

RECEIVED
MAR 2 2 1996
COMPLIANCE & REVIEW SECTION

From:
Division/Bureau: Division of Historical Resources
Reviewer: Jack Reed / Laura A. Kammerer
Date: 4/5/96 4-5-96

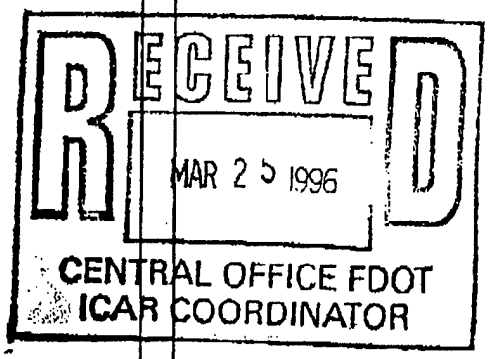
Division of Historical Resources
State of Florida
Written Comments

No response required.

DATE: 03/21/96
COMMENT DUE DATE: 04/04/96
CLEARANCE DUE DATE: 05/03/96
SAI#: FL9603200169C

COUNTY: Duval

STATE AGENCIES	LOCAL/OTHER	OPB POLICY UNITS
__ Community Affairs __ Environmental Protection __ Marine Fisheries Commission __ State X Transportation	__ St. Johns River WMD	__ Environmental Policy/C & ED



The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evalutation and is categorized as one of the following:

— Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.

_X_ Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.

— Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.

— Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

Project Description:

Draft Programmatic Environmental Impact Statement - Facilities Development Necessary To Support Potential Aircraft Carrier Homeporting - Naval Station Mayport, Florida.

To: **Florida State Clearinghouse**
Department of Community Affairs
2740 Centerview Drive
Tallahassee, FL 32399-2100
(904) 922-5438 (SC 292-5438)
(904) 487-2899 (FAX)

EO. 12372/NEPA

☐ No Comment
☐ Comments Attached
☒ Not Applicable

Federal Consistency

☐ No Comment/Consistent
☐ Consistent/Comments Attached
☐ Inconsistent/Comments Attached
☐ Not Applicable

From:

Division/Bureau: FDOT Planning and Programs

Reviewer: David T. Lee, Project Mgr., Aviation/Ports

Date: 4/3/96

Department of Transportation
State of Florida
Written Comments

No response required.

OFFICE OF THE MAYOR

JOHN A. DELANEY
MAYOR

1400 CITY HALL
220 EAST BAY STREET
JACKSONVILLE, FL 32202

April 24, 1996

Commanding Officer
Southern Division, Naval Facilities
Engineering Command
Attn: Ronnie Lattimore, Code 064RL
P.O. Box 190010
North Charleston, SC 29419-9010

Dear Mr. Lattimore:

The Draft Programmatic Environmental Impact Statement (DPEIS) for the Facilities Development Necessary to Support Potential Aircraft Carrier Homeporting at the Naval Station (NAVSTA), Mayport, Florida, has been reviewed by the City of Jacksonville's Planning and Development Department. The assessments and conclusions of the DPEIS are found to be consistent with the overall intent and purpose of the City's 2010 Comprehensive Plan. (1)

Harbor sedimentation and salinity of the water will be affected due to the increased depth of the channel, and further study in these areas is recommended in the DPEIS. The City agrees with this recommendation. (2) In addition, the proposed development must comply with current air and water quality standards required for Jacksonville as described in the 2010 Comprehensive Plan, as well as all other applicable state and federal requirements. (3)

Thank you for the opportunity to review the DPEIS and for your ongoing interest in environmental quality in the City of Jacksonville. My commendation to the Navy for your continued outstanding efforts of coordination and cooperation. It is our pleasure to work with you on this project. (4)

Sincerely,

John A. Delaney
Mayor

JAD/dss

Office of the Mayor
Jacksonville, Florida
Written Comments

RESPONSE

1. Comment noted.

2. Comment noted. Additional studies regarding harbor sedimentation and salinity will be conducted prior to dredging to a depth of -50 feet mllw.

3. Any proposed action will comply with air and water quality regulations, and all other applicable state and federal requirements.

4. Comment noted.

FLORIDA NATURAL AREAS INVENTORY

1018 Thomasville Road, Suite 200-C • Tallahassee, Florida 32303 • (904) 224-8207

May 13, 1996

Commanding Officer
Southern Division, Naval Facilities Engineering Command,
P.O. Box 190010, North Charleston, SC 29419-9010
(attn. Ronnie Lattimore, Code 064RL)

Dear Sir or Madam,

This letter's intent is to address the impacts of associated with the dredging of channels and the homeporting of a CVN at Naval Station of Mayport. I am a representative of Florida Natural Areas Inventory. Our goal is to collect, interpret, and disseminate ecological information critical to the conservation of Florida's biological diversity. Our data and expertise simplify environmental-sound planning and natural resource management to protect the plants, animals and communities that represent Florida's natural heritage. The following information and concerns are based on the assumption that the planned dredge project is to modify an existing channel.

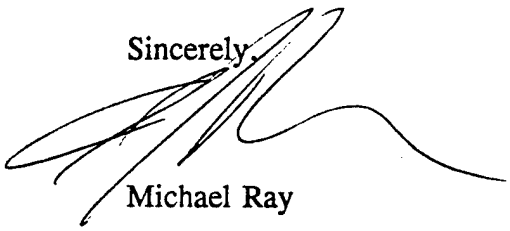
In addition to the physical and chemical effects of dredging(lowering of the water table and elimination of flooding) there are many federally species that may be affected by such activities in this area. Several threatened and endangered sea turtles may be directly influenced by hopper dredging. A biological opinion, issued November 25, 1991, by NMFS found that continued unrestricted hopper dredging in channels along the southeast region's Atlantic coast could jeopardize the continued existence of listed sea turtles. A suggested solution included the seasonal restriction of hopper and other alternate dredging from December through March for your area. This alternative has proven to be effective in reducing sea turtle captures. (1)

The endangered northern right whale, *Eubalaena glacialis*, may be affected by dredging activities and increased vessel movement (see **Final Recovery Plan for the Northern Right Whale**. Dec 1991 NMFS). Please be aware that as much as 20 percent mortality for this species is caused by vessel collisions and/or interactions. The nearshore waters of Southern Georgia and northeast Florida have been designated critical-habitat for these whales who use this area as a wintering calving ground. Seventy-four percent of all the known mature females have been spotted in this vicinity. In addition, there may be impacts on the endangered shortnose sturgeon, *Acipenser brevirostrum*. Although rare in your area, there is the possibility of an incidental direct take of a sturgeon and possible further degradation of habitat. (2)

Additionally, there are concerns for both the dredge site and the fill site. What are the short and long term affects of dredging on bottom sediment characteristics, benthic flora and fauna of both sites, water quality, etc. I believe the army corp. of engineers has done experimentation with spreading fill over a wide area with thin layers versus creating spoils to reduce detrimental effects. (3)

I am pleased to see environmental impacts included in Navy planning. If you have any questions about the above information please don't hesitate to call.

Sincerely,



Michael Ray

Florida Natural Areas Inventory
Tallahassee, Florida
Written Comments

RESPONSE

1. Dredging period restrictions would be addressed during the permit process. The Navy would comply with all permit and regulatory requirements.

2. The USAE would be responsible for the dredging project, and the Navy would encourage use of protective measures to minimize risk of impact to threatened and endangered species. Increased vessel traffic is expected only during dredging, not during homeporting.

3. Studies may need to be performed in the future to evaluate the potential impacts of disposal of dredged material at the ODMDS.

NAVSTA Mayport, Florida — Public Hearing

Please use this form to express your comments and concerns regarding the proposed action.

Name of project : Draft Programmatic Environmental Impact Statement
Facilities Development Necessary to Support Potential Aircraft Carrier Homeporting
Naval Station Mayport, Florida

Am in complete favor of the proposed Facilities Development with the exception of the ODMDS. As a regular beach user, primarily surf fishing, I have found the ocean water quality to be poor more often that not. In laymans terms, "The water is dirty and there's a lot of trash in the water." Regardless of the EPA test results, I am very uncomfortable with the proposal to dump dredged spoil from the bottom of Mayport Basin into the ocean off-shore. Since we are paying to have it dredged, let's "pay" to have it disposed safely on shore where it can be monitored and remediated if necessary. (1)

NAME William J. Flick, P.E.

ADDRESS 614 Miramar Lane

CITY Ponte Vedra STATE FL

ZIP CODE 32082

Leave form with project representative or mail to:

Commanding Officer
Southern Division
Naval Facilities Engineering Command
P.O. Box 190010
North Charleston, SC 29419-9010
Attn: Ronnie Lattimore, Code 064RL

Comment Form

(Comments Should Be Mailed No Later Than May 13, 1996)

William J. Flick
Written Comments

RESPONSE

1. Only EPA-approved material will be disposed offshore. The material is not suitable for shore disposal since it is primarily clay, not sand.

NAVSTA Mayport, Florida — Public Hearing

Please use this form to express your comments and concerns regarding the proposed action.

Name of project : Draft Programmatic Environmental Impact Statement
Facilities Development Necessary to Support Potential Aircraft Carrier Homeporting
Naval Station Mayport, Florida

Speaking as a student with an Environmental Studies degree and as a citizen concerned for our environment, I am in total support of the Programmatic Env. Impact Statmt. I hope it is fully enforced and that the Naval Station Mayport abides by all envntl policies. The impact to benthic species + water quality should be minimal because any disturbance to these is long term + can have bad effects on them. (1) (2)

NAME Christie Musgrave
ADDRESS 1345 45th Ave N
CITY Jax Bch STATE Fl
ZIP CODE 32250

Leave form with project representative or mail to:

Commanding Officer
Southern Division
Naval Facilities Engineering Command
P.O. Box 190010
North Charleston, SC 29419-9010
Attn: Ronnie Lattimore, Code 064RL

Comment Form

(Comments Should Be Mailed No Later Than May 13, 1996)

Christie Musgrave
Written Comments

RESPONSE

1. Comment noted.

John Meserve
Verbal Comments

COMMENT

1. "...and I think the independent agencies -- the Port Authority, the Jacksonville Electric Authority and Jacksonville Transportation Authority ... have done their own studies and said that the infrastructure is not quite there now. It could certainly relatively easily be made available."

2. "... your impact socially and economically will be nothing but good and a benefit to the local community..."

RESPONSE

1. Comment noted.

2. Comment noted.

Walt Fanton
Verbal Comments

COMMENT

1. "I have spoken with ... more than a couple ... local businesses and some of the environmental groups, and they're basically in the same mode as Mr. Meserve ... spoke of ..."

RESPONSE

1. Comment noted.